

The Handbook of **SOCIAL PSYCHOLOGY**

SECOND EDITION

Edited by GARDNER LINDZEY and ELLIOT ARONSON
University of Texas

VOLUME FOUR
GROUP PSYCHOLOGY AND PHENOMENA OF INTERACTION



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Preface to the First Edition

The accelerating expansion of social psychology in the past two decades has led to an acute need for a source book more advanced than the ordinary textbook in the field but yet more focused than scattered periodical literature. Murchison's *Handbook of Social Psychology* (1935), the only previous attempt to meet this need, is out of date and out of print. It was this state of affairs that led us to assemble a book that would represent the major areas of social psychology at a level of difficulty appropriate for graduate students. In addition to serving the needs of graduate instruction, we anticipate that the volumes will be useful in advanced undergraduate courses and as a reference book for professional psychologists.

We first considered the possibility of preparing a *Handbook* three years ago. However, a final decision to proceed with the plan was not reached until the fall of 1951. During the interval we arranged an outline of topics that represented our convictions concerning the present state of social psychology. We then wrote to a large number of distinguished social psychologists asking them whether they felt our venture was likely to be professionally valuable and asking for criticisms of the outline we had prepared. The response to these letters was immensely gratifying—social psychologists as a group appear sufficiently altruistic to spend large amounts of time criticizing and commenting on a project of which they approve even though they may be unable to participate in it themselves. We also asked for specific recommendations of people who seemed best qualified to prepare the various chapters. After receiving answers we drastically revised our outline and proceeded to invite authors to prepare the various chapters. It was not until the spring of 1952 that we completed our list of contributors and even this list later underwent change. We first suggested (tongue in cheek) that the manuscripts be submitted by September 15, 1952. However, as we secretly expected, we were forced to change this due date to January 1, 1953. This “deadline” we tried hard to meet. But of course we failed and shifted our aspiration to June 15, 1953. Again we failed, although by now we were making substantial progress. By early in the fall of 1953 we had all the chapters excepting two, and the

first volume was completed and in the hands of the publishers. The last two chapters were not received until early in 1954, when the second volume went to press.

Something should be said concerning the basis for the organization of the subject matter of these volumes. It became apparent early that there are many ways to subdivide social psychology but very little agreement concerning just which is best. Although we sought the advice of others, we found for almost every compelling suggestion an equally compelling countersuggestion. Thus, in the end, it was necessary to make many arbitrary decisions. So much for our knowledge that the *Handbook* could have been organized in many different ways. There is no single scheme that would satisfy all readers.

We early discovered that the subject matter was too voluminous to be contained in a single volume. Given this decision it seemed quite natural to present in one volume the chapters that dealt primarily with theoretical convictions or systematic positions, and also the methods and procedures commonly employed in social psychology. Likewise it seemed wise to present in one volume those chapters that focus upon the substantive findings and applications of social psychology. The decision to place the historical introduction, theory, and method chapters in the first volume reflects a bias in favor of investigation that begins with an awareness of the message of the past, an attempt at theoretical relevance, and finally with a full knowledge of the procedural or measurement alternatives. All of the content of the first volume is seen, at least by the editor, as a necessary preparation for good investigation. These are the things the social psychologist should know before he lifts a single empirical finger. The second volume, then, can be seen as a justification of the contents of the first volume. Here are the empirical fruits stemming from the theories and methods summarized in the first volume.

But does this ideal scheme mirror common practice? Are the major empirical advances summarized in the second volume in reality a legitimate by-product of theoretical conceptions and sophisticated method? In fairness to science in action (as opposed to science on the books) we are afraid the answer is No. Social psychology has made its advances largely on the shoulders of random empiricists and naive realists. Inability to distinguish between analytic and synthetic and a tendency toward reification of concepts has accompanied many of the most significant advances in this field. Who would say that those who view an attitude as a "construct" created by the investigator have made more of a contribution to this area of psychology than those who naively view attitudes as real and concrete entities? Thus we sorrowfully admit the organization we have imposed upon the *Handbook* may bear little relation to the path thus far trod in the development of social psychology. Nevertheless, it stands as a suggestion of the manner in which future development may well take place and as a reminder that the powerful weapon of systematic theory is now more nearly within the grasp of the wise psychologist than formerly. Where yesterday the theoretically oriented investigator and the random realist may have been on even terms, recent developments within the field may well have destroyed this equality. An approach efficient in the wilderness may be foolish in a more carefully mapped region. In summary, the precedence we give to theoretical positions reflects our conviction of the importance of theories as spurs to research, but may also represent a program for the future rather than a reflection of the past.

It must be conceded that not all areas of social psychology are covered in these volumes with equal thoroughness. Some gaps are due to the blind spots of the editor

while others are the result of contributors failing to cover an area they originally agreed to cover and, in a few cases, to contributors who withdrew altogether. In spite of these shortcomings, the volumes in their present state provide the most comprehensive picture of social psychology that exists in one place today.

While deficiencies of the final product are my own responsibility, they exist in spite of a number of advisors who gave their time and energy generously throughout the venture. Of these collaborators none was nearly so important as Gordon Allport. In fairness he should be co-editor of the volume, as he contributed immeasurably both in matters of policy and in matters of detail. I owe a very special debt of gratitude to my wife Andrea for her tolerance, encouragement, and detailed assistance. Likewise of great importance is the contribution of Shirley H. Heinemann, who has been of constant help throughout the editorial process and in preparing the Index. Crucial to the success of this work were various additional colleagues who served as referees, reading individual chapters and suggesting changes and deletions. On this score I express my gratitude to Raymond Bauer, Anthony Davids, Edward E. Jones, Kaspar Naegle, David Schneider, and Walter Weiss. In addition, many of the contributors served as referees for chapters other than their own. I am indebted to E. G. Boring, S. S. Stevens, and Geraldine Stone for many helpful suggestions based on their experience in arranging the *Handbook of Experimental Psychology*. Mrs. Olga Crawford of Addison-Wesley played an indispensable role in final preparation of the manuscripts.

April 1954

G. L.

Preface to the Second Edition

In the fourteen years that have elapsed since the last edition of this *Handbook*, the field of social psychology has evolved at a rapid rate. The present volumes are intended to represent these changes as faithfully as possible and at a level appropriate for the beginning graduate student as well as the fully trained psychologist.

The reader familiar with the previous *Handbook* will realize that we have employed the same general outline in the present volumes. The many new chapters reflect the increased quantitative and methodological sophistication of social psychologists, the development of certain specialized areas of research, and the increased activity in a variety of applied areas. In some instances we have attempted to compensate for known deficiencies in the coverage of the previous edition.

One can never be certain of portraying adequately the changes in a large and diverse area of scholarship, but we can be certain that this *Handbook* is very different from its predecessor. It is substantially larger—instead of one million words, two volumes, and 30 chapters, there are now approximately two and one-half million words, five volumes, and 45 chapters. We are convinced that our decision to present this material in five volumes will increase its utility for those who have specialized interests linked to either teaching or research activities. But the difference goes beyond mere size. The list of contributors has a decidedly new flavor—of the 45 authors in the previous edition, only 22 have contributed to this volume. Viewed from another vantage, of the 68 authors contributing to the current volume, 46 are represented in the *Handbook* for the first time. Only one chapter is reprinted without a thorough revision, and this, an essay (Hebb and Thompson) presenting a point of view that seems little affected by recent research and formulation. There are 15 chapters that are completely new and, in addition, a number of the replacements bear little resemblance to the chapter of the same, or similar, title that appeared earlier.

Plans for the current revision were begun in January of 1963. By July of that year a tentative chapter outline had been prepared and distributed to an array of

distinguished social scientists, including the previous contributors to the *Handbook*. We benefited materially from the advice of dozens of persons in regard to both the chapter outline and the nomination of potential authors; we are grateful for their efforts on behalf of the *Handbook*. By fall of 1963 we had succeeded in constructing a final outline and a list of contributors. Our initial letters of invitation asked that completed manuscripts be submitted by January 1, 1965. We managed to obtain the bulk of the chapters eighteen months and several deadlines later, and the first two volumes were sent to the publishers early in 1967. The final chapters were secured the following July, when the remaining volumes went to press.

In selecting contributors we made every effort, within the general constraints of technical competence and availability, to obtain scholars of diverse professional and institutional backgrounds. Thus, we take special pleasure in the fact that almost all areas of the country are well represented, that six of the contributors are affiliated with institutions outside the United States, and that the authors include political scientists, sociologists, and anthropologists as well as psychologists.

We consider it extremely fortunate that of the chapters listed in our working outline, all of those that we regarded as "key" or central chapters are included here. Indeed, there are only three chapters from that list that are not a part of the present volumes; this includes one (attitude change) that was deliberately incorporated within another chapter because such an arrangement seemed to offer a greater likelihood of satisfactory integration and coverage. It should be noted that this success is in marked contrast to the previous *Handbook*, where such essential areas as attitudes and social perception were omitted because of last-minute delinquencies. Although a few invited contributors did withdraw from the present *Handbook* after initially having agreed to prepare a chapter, in all cases we were fortunate in being able to find equally qualified replacements who were willing to take on this assignment on relatively short notice. To these individuals we owe a special debt of gratitude.

We wish to acknowledge the indispensable assistance of Judith Hilton, Shirley Cearley, and Leslie Segner in connection with the final preparation of the manuscript. Finally, we would like to express our gratitude to Mary Jane Whiteside for her tireless efforts in the final indexing of all volumes of the *Handbook*.

February 1968
Austin, Texas

G. L.
E. A.

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Contents

VOLUME FOUR

GROUP PSYCHOLOGY AND PHENOMENA OF INTERACTION

29. Group Problem Solving 1
Harold H. Kelley, University of California, Los Angeles
John W. Thibaut, University of North Carolina
30. Group Structure: Attraction, Coalitions, Communication, and Power 102
Barry E. Collins, University of California, Los Angeles
Bertram H. Raven, University of California, Los Angeles
31. Leadership 205
Cecil A. Gibb, Australian National University
32. Social Structure and Behavior 283
Wilbert E. Moore, Russell Sage Foundation
33. Cultural Psychology: Comparative Studies of Human Behavior 323
George A. DeVos, University of California, Berkeley
Arthur E. Hippler, University of Alaska
- ✓34. National Character: The Study of
Modal Personality and Sociocultural Systems 418
Alex Inkeles, Harvard University
Daniel J. Levinson, Yale University
35. Collective Behavior: Crowds and Social Movements 507
Stanley Milgram, Harvard University
Hans Toch, Harvard University
36. The Social Psychology of Infrahuman Animals 611
J. P. Scott, Bowling Green State University
- Author Index 645
- Subject Index 665

VOLUME ONE

HISTORICAL INTRODUCTION

1. The Historical Background of Modern Social Psychology
Gordon W. Allport

SYSTEMATIC POSITIONS

2. Stimulus-Response Theory in Contemporary Social Psychology
Seymour M. Berger and William W. Lambert
3. Mathematical Models of Social Behavior
Seymour Rosenberg
4. The Relevance of Freudian Psychology and Related Viewpoints for the Social Sciences
Calvin S. Hall and Gardner Lindzey
5. Cognitive Theories in Social Psychology
Robert B. Zajonc
6. Field Theory in Social Psychology
Morton Deutsch
- ✓ 7. Role Theory
Theodore R. Sarbin and Vernon L. Allen
8. Organizations
Richard M. Cyert and Kenneth R. MacCrimmon

VOLUME TWO

RESEARCH METHODS

9. Experimentation in Social Psychology
Elhot Aronson and J. Merrill Carlsmith
10. Data Analysis, Including Statistics
Frederick Mosteller and John W. Tukey
11. Attitude Measurement
William A. Scott
12. Simulation of Social Behavior
Robert P. Abelson
13. Systematic Observational Methods
Karl E. Weick
14. Measurement of Social Choice and Interpersonal Attractiveness
Gardner Lindzey and Donn Byrne
15. Interviewing
Charles F. Cannell and Robert L. Kahn
16. Content Analysis
Ole R. Holsti, with the collaboration of Joanne K. Loomba and Robert C. North

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John W. M. Whiting

18. The Social Significance of Animal Studies

D. O. Hebb and W. R. Thompson

VOLUME THREE

THE INDIVIDUAL IN A SOCIAL CONTEXT

19. Psychophysiological Approaches in Social Psychology

David Shapiro and Andrew Crider

20. Social Motivation

Leonard Berkowitz

21. The Nature of Attitudes and Attitude Change

William J. McGuire

~~22.~~ Social and Cultural Factors in Perception

Henri Tajfel

23. Person Perception

Renato Tagiuri

24. Socialization

Edward Zigler and Irvin L. Child

25. Personality and Social Interaction

David Marlowe and Kenneth J. Gergen

26. Psycholinguistics

George A. Miller and David McNeill

27. Laughter, Humor, and Play

D. E. Berlyne

28. Esthetics

Irvin L. Child

VOLUME FIVE

APPLIED SOCIAL PSYCHOLOGY

37. Prejudice and Ethnic Relations

John Harding, Harold Proshansky, Bernard Kutner, and Isidor Chein

38. Effects of the Mass Media of Communication

Walter Weiss

39. Industrial Social Psychology

Victor H. Vroom

40. Psychology and Economics

Herbert A. Simon and Andrew C. Stedry

41. Political Behavior
David O. Sears
42. A Social Psychology of Education
J. W. Getzels
43. Social-Psychological Aspects of International Relations
Amitai Etzioni
44. Psychology of Religion
James E. Dittes
45. Social Psychology of Mental Health
Howard E. Freeman and Jeanne M. Giovannoni

Group Problem Solving

HAROLD H. KELLEY, *University of California, Los Angeles*

JOHN W. THIBAUT, *University of North Carolina*

In our earlier chapter (Kelley and Thibaut, 1954) for this *Handbook* we attempted to summarize the literature on experimental studies of problem solving by small groups, confining ourselves to the task of making a reasonably complete report. The organization of the chapter developed out of a classification of the studies according to topical rubrics and relatively phenotypic variables. No effort was made to produce a theory of group problem solving, nor even to cast the empirical regularities that were observed into theoretical perspective.

In the present chapter we have paid less attention to exhaustive reporting of the literature, and more to placing the issues and phenomena in a theoretical context. This attempt to bring a more systematic orientation to group problem solving has been guided by the concepts and principles presented in Thibaut and Kelley (1959), though we have found it necessary to adapt and extend some aspects of that formulation for the special purposes of this chapter. Though we would not claim that we have emerged with a *theory* of group problem solving, we do not feel reckless in suggesting that the taxonomy provided here is more useful and more illuminating than the topical categories of our 1954 chapter.

In viewing group problem solving from a more theoretical perspective, our conception of its nature and proper boundaries has also shifted. In our earlier chapter we accepted the traditional definition of the domain as it was reflected in the "classical" experiments in group problem solving. In those studies the "problem" was typically the intellectual or psychomotor task that the group confronted. The view of problem solving taken here is broadened to include not only group action on

Kelley's work on this chapter was supported in part by a grant (GS-1121X) from the National Science Foundation, and Thibaut's by a contract (N00014-66-C0082) from the Group Psychology Branch of the Office of Naval Research. Our initial screening of the literature was greatly facilitated by the *Bibliography of Publications Relating to the Small Group*, compiled by Bertram H. Raven. We are indebted to Barry E. Collins and Alice Davis Friedman for their comments on the first draft.

such "external" tasks, but also the response of the group to the conflicting and divisive interests that can be aroused within it, as when it is necessary (and possible, by virtue of a sufficient base of common interest) to reach agreements about the fair division of outcomes available to the group. From this perspective, group problem solving comes into existence when common action is taken to attempt to satisfy common interests emerging from common problems.

The chapter begins with a brief discussion of individual problem solving in social settings, emphasizing particularly the conditions under which information is sought and accepted. "Classical" group problem solving is treated next under the ideal conditions of pure cooperation (perfect commonality of interest), within which are analyzed the processes of information and response distribution. After taking brief note of the idealized conditions of pure competition, we turn to the wide class of cases in which the group members' motivations are a mixture of cooperative and competitive orientations. We then consider the ways in which group solutions can be reached by "local" mechanisms which do not require the distribution of information through the group. This is followed by summary descriptions of a selected set of models related to group problem solving. We close with a reexamination of the venerable question of the one or the many, individuals versus groups.

INDIVIDUAL PROBLEM SOLVING IN A SOCIAL CONTEXT

Before proceeding to our main concern, problem solving by groups, it is desirable to consider individual problem solving as it occurs under social conditions where the person can be influenced in his activities by other persons. In reflecting upon this simpler situation we can develop some of the concepts necessary for the subsequent analysis of the more complex case of *group* problem solving and, perhaps, simplify somewhat our task there.

If we observe a person before he is able to solve a problem and then, later, when he is able to do so, a difference is observed in the degree of appropriateness of his behavior with respect to the requirements of the task. Elsewhere (Thibaut and Kelley, 1959) we have analyzed the necessary conditions for task-appropriate behavior, in considering a person's adaptation to the *behavior control* a task or another person exercises over him. To make appropriate adjustments to such behavior control (and to do so in a deliberate and thoughtful manner—although this by no means is the only way in which problems come to be solved), the individual must (1) be able to distinguish among and identify different states of the task, (2) have certain discriminable responses available in his behavioral repertoire, and (3) know the manner in which his outcomes depend upon task-state and response contingencies. Becoming able to solve a problem, then, involves a change in one or more of these realms of perceptual, behavioral, and cognitive skills.

EFFECTS OF THE PRESENCE OF OTHERS

Research by social psychologists has shown that the acquisition and exercise of these various skills is affected by the sheer presence of other persons. The effects are much the same whether the others provide an audience for the individual's activity or are themselves engaged in the same activity. This is a fact of considerable importance for the analysis of group problem solving, because such activity typically brings persons

together and thereby renders them susceptible to the “social-facilitation” (or social-interference) effects produced by copresence. Here we shall briefly examine the evidence about these effects as they pertain to the subprocesses of problem solving outlined above. A comprehensive survey of the literature is not our intention. For further material on this topic, the reader is referred to our earlier review (Kelley and Thibaut, 1954), to Allee’s account of relevant animal experiments (1951), and to the excellent recent article by Zajonc (1965).

Perceptual processes

Little is known about the effects of others upon discrimination and judgmental processes. Evidence from Allport (1924) and Farnsworth and Behner (1931) suggests that subjects tend to give more moderate judgments (of weights and odors) when in the “together” situation than when alone. It appears, as Allport suggests, that, “When working *with* others we respond in a measure as though we were reacting *to* them” (p. 274). In the case of these judgments, it is as if the person tempered his reactions so as to avoid the possibility of being extremely different from the others.

Others’ presence can probably serve to heighten a person’s attention to relevant cues (if their presence serves to emphasize the importance of paying attention) or to draw his attention away and toward irrelevant ones. Bergum and Lehr (1963) provide an instance of the former. National Guard trainees missed fewer relevant cues in a 135-minute vigilance task when subject to occasional visits by observers than when working in strict isolation. It may be relevant that the visitors were no mere observers; they were officers in the National Guard.

Socially induced distraction of attention, an everyday experience, is indicated in experimental studies of discrimination learning and simple maze learning. Both types of learning have been shown to be slower with pairs of animal subjects than with single animals (for example, see Allee, 1951; Klopfer, 1958). The reason for this social-interference effect is not clear, but it seems plausible that it is due in part to a deterioration of attention and overlooking of relevant discriminatory cues.

It is possible, of course, for the behavior of one subject in a learning problem to provide appropriate discriminatory cues for the others (Bandura and Walters, 1963; Miller and Dollard, 1941). This probably accounts for the more rapid learning of a simple task by schools of fish than by individuals (Allee, 1951). However, this observational learning is not immediately relevant to our discussion of the effects of *sheer* presence.

Response production

Some responses are enacted more rapidly, vigorously, and accurately under “together” than under “alone” conditions, and others are performed more poorly and with more errors. The principle that seems best to organize these contradictory results, as well as other evidence to be given below, is that the presence of others increases the individual’s level of motivation. Some implications of this generalization have been outlined by Zajonc (1965), who refers to the presence of others as “a source of arousal.” He notes that learning experiments have shown that high drive (or arousal or activation) favors the emission of dominant (well-learned) responses. During early stages of learning, when the dominant responses are often the wrong

ones, their enhancement by high drive level impairs learning. However, after learning is well along and the correct responses have become prepotent, high drive level facilitates appropriate performance.

The various effects of audiences and coactors are quite consistent with this formulation. Well-learned behaviors are produced with greater proficiency; behaviors imperfectly learned are produced with less. Most directly relevant is the evidence that learning is slower in the presence of others (see Pessin, 1933, and the animal studies referred to above).

Other types of evidence indicating an increase in motivation level under social conditions are as follows:

1. *Subjects report that an urge toward greater speed is produced by the activity of others, and they report greater emotional excitement (and distraction) than when alone.*
2. *Subjects are aroused to activity even after having (in social isolation) reached a point of satiation with it (see Burton, 1941, on children's play activity, and studies on animal eating behavior summarized by Zajonc, 1965).*
3. *The largest performance gains occur for individuals who give evidence of having least interest in the task itself (those with the lowest solo performance on tasks where performance seems to be a function primarily of how hard the person tries).*
4. *Intraindividual (time-to-time) variability is higher under social conditions (Allee and Masure, 1936; Allport, 1924; Mukerji, 1940). This would be expected if it is assumed that the heightened motivation carries the person to a performance level where the counterforces (from fatigue, skill limitations, effort, etc.) are very high. The high level of tension resulting from the conflict between the two sets of pressures would create high susceptibility to severe though momentary disruptions and would be manifested in large variations in performance.*

The preceding evidence can be interpreted to mean that social conditions increase motivation for high task performance, the results being positive or negative depending on the person's level of skill, initial motivation, etc. However, there also seem to be other effects such as the direct elicitation of competing responses and the arousal of motives not related to task performance. Thus Klopfer (1959) found that, even though performing well individually on a food-discrimination problem, greenfinches placed with untrained partners tended repeatedly to show nondiscriminatory behavior. He suggests that the sight of another bird feeding is so powerful an unconditioned stimulus to the feeding of the test bird that it overcomes previously established avoidance tendencies. He also found evidence suggesting that *overlearned* responses are resistant to even this aspect of social influence.

Besides serving to arouse task-inappropriate responses, the sight of others can also serve to arouse social motives which inhibit task-appropriate ones. With certain types of tasks, subjects report that the presence of others makes them more cautious and constrained. As a consequence, responses are produced with greater delay (as the person searches his repertoire for safe alternatives) and are more commonplace in nature. Wapner and Alper (1952) report evidence of longer response latencies under audience conditions, and Allport (1924) gives evidence that fewer word associations of a personal nature (and hence, more that are common) are produced in a "together" situation. The latter may be a reflection not of social inhibitions but

of heightened task motivation which produces a tendency to respond more quickly. Pressure for fast response seems to increase the frequency of popular responses (Horton, Marlowe, and Crowne, 1963).

Zajonc and Sales (1966) provide an experimental analog of Allport's association task, employing it to test the drive-level hypothesis that "together" conditions increase the likelihood of the occurrence of responses that have been most rehearsed and decrease the likelihood of less practiced ones. Subjects were first shown a number of "foreign" words and asked to pronounce them. Some words were shown and practiced frequently, others only a few times. Later, when asked which of the words had been projected tachistoscopically on a screen (the pattern being in reality a meaningless set of lines), the subjects were generally more likely to respond with words they had earlier practiced more frequently. In keeping with the hypothesis, this differential was more marked under "audience" conditions than when the subject was alone. Thus, whereas Allport's subjects drew upon their entire verbal repertoires in order to free-associate to stimulus words, Zajonc and Sales's subjects "associated" to the non-sense pattern using the set of words defined by the experimenter. In both cases, the more common words in the repertoires (and presumably the better learned ones) were enhanced under the "together" conditions, at the expense of the less common ones.

Cognitive processes

The more complex intellectual processes (concept formation, detecting relationships, analogical reasoning, etc.) are probably commonly disrupted by the presence of others. Allport (1924) concluded from his and other studies that "... it is the *overt* responses, such as writing, which receive facilitation through the stimulus of co-workers. The *intellectual* or *implicit* responses of thought are hampered rather than facilitated" (p. 274). Supportive evidence comes from Allport's own investigation of the arguments subjects wrote in refutation of didactic passages from two ancient philosophers. In the "together" condition, more words were written but the arguments tended to be poorer. The greater difficulty encountered in various learning tasks, while open to various interpretations, may also reflect the deleterious effects of social factors on the recognition of contingencies. This point is entirely compatible, of course, with Zajonc's suggestion that social conditions interfere with the less well-established response patterns: the responses necessary to cope with the conceptual aspects of tasks are usually the ones the individual has had least opportunity to rehearse.

Additional considerations

The notion of "presence" should not be interpreted too literally, in terms of occupying a position in view of the individual. Wapner and Alper (1952) found that an unseen audience (known to be able to observe the subject through a one-way mirror but not visible to him) was more inhibiting than a visible one. Perhaps more subtle is Dashiell's demonstration (1935) that effects similar to (though somewhat weaker than) those noted for true "together" conditions were produced by having subjects work on the same task at the same time, and with knowledge of this fact, though in different rooms. Dashiell notes that "... when working apparently in isolation an individual may actually be under social influences ..." (p. 1110).

Finally, several investigators have found that the effects of presence, whether positive or negative, wear off with time (Allport, 1920, 1924; Sengupta and Sinha, 1926. Wapner and Alper, 1952). Apparently, with his great capacity for adapting to distracting and motivating instigations, man can accommodate even to the presence of his fellows

DIRECT CONTRIBUTIONS BY OTHERS

Other persons may make direct contributions to a person's problem-solving efforts by helping him with any or all of the various perceptual, behavioral, and cognitive subtasks involved. They may take over the total problem for him, making the discriminations, determining the contingencies, and making the appropriate responses (for example, his parents do the child's entire homework for him). They may perform only the response part of the task, doing so in accordance with his instructions, based upon his discriminations and contingency inferences (the parents write or type the essay the child composes, because his penmanship is poor). The most interesting cases involve the provision of information by the helpers. This information may be rather *specific*. They may make the necessary discriminations for him and report the state of the task (the parents emphasize that the arithmetic problem requires giving the answer rounded to the nearest tens place). They may tell him which responses to choose among (they offer two possible answers and let him choose between them). They may give him information about the contingencies (they describe the type of problem as involving multiplication rather than addition). They may tell him the actual response to make (the parents tell the child what to write down). Or the information may be more *general*, consisting, for example, of instructions about any of these aspects that are useful for a number of different problems.

The consequences of the help a person receives can be evaluated by comparing his success after receiving it with the success he would otherwise have enjoyed. Obviously, this depends on (1) the quality of his own problem-solving efforts, (2) the quality of the help he is proffered, and (3) the extent to which he accepts it. The analysis of the first two of these factors is beyond the scope of this chapter. They concern psychological processes such as memory, sensory and perceptual skills, response acquisition and differentiation, transfer of training, stimulus generalization, concept formation, etc. However, the third factor is essentially social-psychological in nature and, indeed, has been and continues to be a central focus of attention in social psychology. We turn now to a brief analysis of the acceptance of social influence.

THE SEEKING AND ACCEPTANCE OF INFORMATION. INFORMATION DEPENDENCE

We assume that the individual strives to determine the intrinsic attributes of the world around him. This striving is partly, and perhaps largely, instrumental to successful problem solving and coping with the demands of the environment. This aspect of the "search for meaning" is the most relevant one for our present concerns, but in emphasizing it, we do not mean to deny that the striving may become functionally autonomous of coping and appear in the form of "curiosity drive" or interest in knowledge for its own sake.

In terms of our problem-solving rubrics, the things about which a person needs to know include not only the task and task states, but also his own responses and, of course, the response-state payoff contingencies. To solve a problem, he must know what state prevails at a given time, what his possible responses are, and what their effects are under different conditions. These are all facts relevant to his success, and about which he strives to have a veridical view.

The manifestations and determinants of this striving are suggested by *attribution theory* as presented by Fritz Heider (1958). Attribution refers to the process of inferring or perceiving the dispositional properties of entities in the environment—the stable features of distal objects: “. . . man grasps reality, and can predict and control it, by referring transient and variable behavior and events to relatively unchanging underlying conditions, the so-called dispositional properties of his world” (Heider, 1958, p. 79).

Attribution theory describes the processes by which the individual seeks and attains conceptions of these stable dispositions or attributes. The central question to which the theory addresses itself is this: How can a person ascertain that his impression of an entity reflects the inherent dispositions of the thing itself and not his own idiosyncrasies or a peculiarity of a particular interaction with the thing? Heider's examples suggest that several criteria of external validity are employed in making attributions.

1. *Presence-absence*: the impression is attributed to that thing or condition which is present when the impression is present and absent when the impression is absent.
2. *Consistency over time*: each time the thing or condition is present, the individual's reaction must be the same or nearly so.
3. *Consistency over modality*: his reaction must be consistent even though his mode of interaction with the thing varies; he sees it and he feels it, or first he intuitively answers and then he calculates it.
4. *Consensus*: attributes of external origin are experienced the same way by all observers; there is consistency among persons.

“Tradition” is a combination of the second and fourth criteria, consisting as it does of a consensus that is consistent over time (for example, the experimental paradigm for tradition proposed by Jacobs and Campbell, 1961).

In his search for “. . . the invariances of the environment that are relevant to him” (Heider, 1958, p. 81), the individual strives to develop a system of attributions which yields evidence fulfilling these criteria to a high degree. In other words, the person strives for a view of the world that yields reactions that are temporally, intermodally, and consensually consistent. To the degree that his attributions fulfill the criteria, he feels confident that he has a true picture of what is “out there.” With high fulfillment of the criteria, he makes judgments quickly and with subjective confidence, and he takes appropriate actions with speed and vigor. With low fulfillment of the criteria, he is uncertain in his views and hesitant in action, torn between contradictory lines of behavior. [For some of the evidence on the relationships among confidence, decision time, stability of report, consensus, and validity, see Adams and Adams (1961), Brown and Lenneberg (1958), and Johnson (1955). It is not assumed that

fulfillment of these criteria necessarily implies validity of the person's attributions. It merely results in his feeling that his views are veridical. In certain instances, as in cases of perceptual illusions (Farnsworth and Williams, 1936), there may be considerable consensus and consistency in a judgment that is wrong. An important problem is to determine when a social consensus becomes incorrect, as through exclusion of certain persons or restriction on permissible modes of interaction with the environment.]

This line of thought has several implications for our analysis of the individual's seeking and accepting information from others. In the first place, it suggests an approach to indexing (and measuring) the person's *state of information* regarding a given aspect of his world. The theory suggests that this be done in terms of the *stability of his attributions*. The criteria refer both to the consistency over time and modality of his own reactions and the consistency over persons of their reactions, but both kinds of evidence contribute to the individual's stability of reaction. Of course, stability (or variability) is relative. It might be supposed that an analog to analysis of variance would be appropriate, where stability in attribution with respect to a given entity is compared with the degree of differentiation between different entities. High stability would characterize a person who can differentiate well between different entities and with relatively little variability in his reactions to any given one.

Once the state or level of information has been defined as above, attribution theory has implications for defining *information dependence*. Elsewhere (Thibaut and Kelley, 1959), we have made an analysis of outcome dependence and traced its implications for interpersonal relationships. In that analysis it was clear that information is often of crucial importance to the person's success in adapting to situations of outcome dependence. The paradigmatic example is that of a person subject to behavior control by another person. If he is to achieve the level of outcomes possible in the relationship (and find it to be more satisfactory than alternative relationships), the person must have information about concurrent and future actions of the other person and conceptions of appropriate counteractions on his own part. For this information, he may be dependent upon the other person or upon third parties. (In the later section on "mixed-motive relationships," we will attempt to show that when convergent interests dominate the relationship, social influence will be based mainly on information dependence and manifested by behavior control. When divergent interests dominate the relationship, social influence will tend to be based on outcome dependence and manifested by fate control.)

We are suggesting here the possibility of a systematic analysis of information dependence, an analysis that has points in common with that proposed by Jones and Gerard (1967). As the reader will see, this analysis relates information dependence in a functional manner to outcome dependence. At the same time, our analysis of information dependence parallels in many respects our earlier analysis of outcome dependence. "Level of attribution stability" for an individual assumes the role played in the earlier analysis by "level of outcomes" to an individual. Instead of considering various possible sources of outcomes, as in the earlier case, our attention turns to the various available sources of information. Person *A* can be said to be informationally dependent on *B* if *B* can raise *A*'s level of stability of attribution to a higher level than *A* can attain from alternative information sources. As in the case of outcome dependence, information dependence can be defined *objectively*, in terms of the potential

or actual effects on *A*'s attribution stability of receiving information from *B*, or *subjectively*, in terms of either the anticipated or the experienced effects.

Anticipated information dependence affords the basis for seeking information. Person *A* will seek information from *B* if he believes *B*'s information can put him at a higher level of stability than can available alternative information sources, and particularly if he believes *B*'s information will yield at least as much stability as *A* estimates to be possible, given adequate information about the particular type of problem.

The bases of *A*'s initial and continued acceptance of *B*'s information are implied by attribution theory. Person *A* will be influenced by *B* if *B*'s communication enables *A* subsequently to achieve a higher level of stability in his attribution than before. This may occur, for example, if *B*'s communication illuminates some of *A*'s recent encounters with the object so as to reveal to him a heretofore unrecognized consistency; or if *B*'s communication fits with and promotes a consensus *A* has been assembling; or if *B* provides a perspective on the object which enables *A* to find consistency in his own subsequent confrontations with it.

This suggests, of course, that *A* will be more susceptible to influence, the more variable his prior attributions have been. Attribution instability (and hence, susceptibility to influence) will be high with (1) little social support (Asch, 1951), (2) poor or ambiguous information (Asch, 1951), (3) problems difficult beyond the person's capabilities (Coffin, 1941; Patel and Gordon, 1960), (4) inappropriate views and "solutions" (Kanareff and Lanzetta, 1960; Kelman, 1950; Mausner, 1954b; Mausner and Bloch, 1957), and (5) other experiences engendering low self-confidence (Boomer, 1959; Hochbaum, 1954; Kelley and Lamb, 1957).

Viewing the same phenomenon from the other side, *B*'s influence will be great if he can increase *A*'s stability. This will depend on (1) *B*'s style—the indications he gives that his own attributions are stable, including such clues as his confidence, definiteness, short latency of report, and strength of assertion (Di Vesta, Meyer, and Mills, 1964; Shaw, 1961; Shaw and Penrod, 1962); (2) *B*'s content—the means he provides for *A* to be stable in his attributions, including information, appropriateness of solutions, their comprehensibility, and utility in *A*'s hands (Hovland, Janis, and Kelley, 1953); (3) the information *B* provides about social consensus—and the number of *B*'s involved (Asch, 1951; Mausner and Bloch, 1957; L. A. Rosenberg, 1963); and (4) *B*'s demonstrated success or expertise (Hollander, 1960; Lanzetta and Kanareff, 1959; Mausner, 1954a; Rosenbaum and Tucker, 1962).

The factors affecting the persistence of *B*'s influence (or *A*'s continued acceptance) can be cast in similar terms. Upon what is the resulting stability of *A*'s attributions dependent once he has been influenced? What must be retained or remembered, or made salient, if the stability is to persist? The necessary factor may consist of an approach to the problem, a way of looking at it, a label for the phenomenon, a set of facts, or a specific solution. Or stability may depend on retaining information regarding who it is that shares the opinion: the social consensus, person *B*, or other prestigious sources.

Person *B*'s message may change the degree to which *A* is informationally dependent on him. For example, it may provide *A* with an approach to the problem or a solution mode that enables him independently to achieve consistency in his own successive confrontations of the problem, thereby reducing his dependence on *B*. On the other hand, *B*'s message may reduce the stability of attribution *A* can sub-

sequently achieve on his own. For example, it may merely add sources of inconsistency by presenting both sides, portraying widespread disagreement or uncertainty, or describing several solutions that are difficult to choose among. Consequently, *A*'s information dependence will be increased, provided his expectations regarding the degree of realizable stability remain high and he believes that *B* can resolve the matter and that other information sources cannot. But it *may* reduce *A*'s information dependence. He may conclude that no very high level of consistency with regard to the problem is possible—that it is not soluble or that the external entities do not have stable attributes—and hence he abandons his search for stability.

INTERPLAY BETWEEN OUTCOMES AND INFORMATION SEEKING

A discussion of the individual's information seeking would not be complete without a brief consideration of the relation between his outcomes and his seeking of information. Our argument begins with the apparent fact that the individual is not always devoted to information attainment and processing. He is not always in a problem-solving or attribution-making relationship with his world. Instead, he is often simply enjoying or consuming whatever rewards and satisfactions it has to offer.

Information seeking and processing are in large part instrumental to attaining better outcomes. The problem-solving orientation seems often to be initiated by dissatisfaction with outcomes. We have suggested that a person is dissatisfied when his outcomes drop below his *comparison level for outcomes*, this level being a kind of level of aspiration or conception of what outcomes he should be able to attain from the given task or relationship (Thibaut and Kelley, 1959). It seems reasonable to assume further that the comparison level marks the dividing line between two different orientations: (1) Above it, the person acts simply and directly to enjoy his outcomes. He is generally satisfied with them, but he will, of course, make adjustments of a minor or "local" sort in order to attain the better ones among them. (2) Below it, the person adopts an information-seeking and -processing set in which his goal is to maximize information. In the interests of doing so, he is often willing to suffer temporary costs for the long-run gains to be obtained through informational analysis. [This assumption is quite similar to that made by March and Simon (1958) with regard to the initiation of search behavior. They argue that there is a critical level on the satisfaction-dissatisfaction scale below which search for new alternatives is begun.]

The above assumption about the comparison level is entirely consistent with our earlier assertion about the initiation of information seeking. Dropping below the comparison level is destabilizing. It indicates for the individual that some or all of his attributions about the problem are invalid.

TYPES OF TASKS AND PERSONALITIES

The comparison level will be at different locations for different types of tasks. Therefore, tasks will differentially elicit information seeking and processing. A problem which involves skill and is easy enough for the person to feel capable of mastering it will be one for which he has a relatively high comparison level. Unless a fair degree of success is forthcoming, he will enter upon problem-solving efforts. On the other hand, for a problem of greater difficulty or one he perceives to be beyond his control (for example, a chance or luck task), his expectations are lower. Consequently he

will settle for lower outcomes, and only if the consequences are extremely poor will he enter into the information-seeking and -processing mode. (See Lefcourt, 1966, and Rotter, 1966, for summaries of investigations of skill versus chance tasks.)

With respect to a given problem, there will be similar differences among persons according to their confidence in their ability to cope with the problem, or their assessment of it as being a matter of skill versus luck.

There also seem to be *general* individual differences in regard to felt power which cut across different tasks and relationships. In an earlier review, we have summarized the evidence that a high-power, outgoing, confident person generally has a higher comparison level (Thibaut and Kelley, 1959). According to the present suggestion, this person would more often be found in problem-solving activities. This notion gains support from recent work on the "internal-locus-of-control" person who feels that his own actions are primarily responsible for the consequences he experiences (Cromwell, 1963; Lefcourt, 1966; Rotter, 1966; Seeman, 1963; Seeman and Evans, 1962). The evidence suggests that this type of person has an information orientation toward tasks, is highly responsive to task cues and less so to the hedonistic aspects of tasks, often engages in information-seeking behavior, is dissatisfied with the amount of information he gets in certain restricted environments, and learns and retains information relevant to his present and future situations. In contrast, the "external-locus-of-control" person (who believes his outcomes are subject to an external locus of control) is more passive and reacts to the pleasurable and painful aspects of the situation with a hedonistic orientation rather than an informational one.

"GIVING UP" ON A TASK

If receiving outcomes below the comparison level tends to elicit information seeking, what condition or conditions terminate its course? Just as we assume that information-seeking activities are initiated upon dropping below the comparison level, it seems reasonable to believe that the person will return to the consummatory process when his information level reaches what he regards to be a satisfactory level. If, with the new information level, he is still unable to gain outcomes above the comparison level, the comparison level is likely to drop and he suffers a feeling of loss of mastery or ability to control the situation. He may then return to further information seeking, but after several such cycles of seeking information and trying it out, the comparison level will equal or approximate the level of the available alternatives and he will regard the problem as insoluble. He will then "give up," initiate no further search behavior with regard to that problem, and prepare to enter the best alternative relationship. It seems likely that as the comparison level comes very close to the comparison level for alternatives, the search behavior will be oriented toward identifying, assessing, and choosing among the available alternatives (*cf.* March and Simon, 1958).

It may be worth noting that as the comparison level drops, the attributional stability of the individual and his expectations about the level of stability possible for the particular task may or may not drop. When he finds his outcomes to be below the comparison level, the effect is to destabilize his attributions, but he may finally achieve highly stable attributions along with low expectations of outcomes from the task. For example, he may eventually find enough evidence indicating the essentially

random character of the task outcomes to enable him to make a highly stable attribution of "randomness" as the task disposition. However, this attribution is incompatible with expecting any high outcomes that would be contingent on his mastery of the task.

THE DISTRIBUTION PROCESSES IN GROUP PROBLEM SOLVING

We now turn to the central topic of our chapter, employing the concepts developed in preceding sections for the discussion and analysis of problem solving by groups. In group problem solving, two or more persons are interdependent in the sense that each one's outcomes are partly determined by the behavior of the other. This follows from what the term "group problem" refers to, namely, the fact that a "group" answer, product, or action is required—an answer, product, or action *representing* the group, with the implication that the outcomes of all members will in some manner be determined by that product.

The manner in which the members' outcomes are interdependent may vary a great deal. They may each receive outcomes in proportion to the quality of the group product. In this case, their interests are completely congruent or, as we have expressed it elsewhere (Thibaut and Kelley, 1959), their outcomes are in perfect correspondence. At the opposite extreme, the particular group product that yields one member maximum outcomes may yield the rest poor outcomes. This case has been referred to as noncorrespondence of outcomes or conflict of interest. A more typical case involves a mixture of competition and cooperation, as when the quality of the group product determines the magnitude of an outcome which the group *qua* group receives and which the members then can allocate among themselves as they wish. If the outcome to be allocated is fixed and is small in relation to members' aspiration levels, the group members will have noncorrespondence of outcomes or conflicts of interest, each aspiring to an impossibly large share of the group prize. This conflict of interest creates an *outcome-distribution* problem, that of distributing outcomes over members in a manner that will be satisfactory.

In their problem solving, groups often have two other types of distribution problems: those of *information distribution* and of *response distribution*. The first type arises from the necessity or desirability of exchanging and sharing information. For example, in the common-symbol task frequently used in communication-network studies, each subject is provided with part of the information necessary for determining which symbol appears on all of their several lists. The second type of problem arises from the necessity for controlling and coordinating responses necessary to the preparation and production of the group solution. Minimally, it is usually necessary that someone write down the group solution for transmittal to the evaluating agent. It is also often necessary that two or more members make appropriate responses at a given time. For example, the McCurdy and Lambert (1952) task has the conjunctive requirement that each member set his switch in the correct position on each trial.

In brief, the group "problem" may entail any subset of three more particular problems: outcome distribution, information distribution, and response distribution. And each of these problems will be reflected in social processes associated respectively with outcome distribution (negotiation, exercise of power), information distribution

(information seeking, exchange, sharing, persuasion), and response distribution (response control, behavioral cueing, coordination signals). This is obviously a social-interaction view of group problem solving. We overlook the details of the actual problem solving (at the level of psychological analysis of the individual's processes) and stress the *social processes* which arise from interdependence (of outcome and information) and which provide the means for aiding and influencing individual problem solving and for reflecting the results of such problem solving in the behaviors enacted on behalf of the group.

In discussing these processes in more detail, we will first simplify our task by eliminating the problems of outcome distribution. This may be done by limiting our initial analysis to cases of pure cooperation. With perfect correspondence of outcomes or total commonality of interests, the question of outcome distribution does not arise. The group members have no usable power over one another because for one person to take an action to another's detriment is to damage his own interests at the same time. Thus, all members are equally concerned that the group product be superior. The problems that remain are merely those of information and response distribution. In the context of this pure case, we can examine these latter processes in their uncontaminated form. Then, in later sections, we will introduce the factor of conflict of interest and consider its effect on the information- and response-distribution processes.

It should be made clear that the case of pure cooperation is an idealized one and probably rarely (if ever) exists in the real world. The mixed case, combining commonality and conflict of interest, is by far the most common or typical instance to be encountered. However, the case of pure cooperation is a simple place at which to begin our analysis and it exemplifies the characteristics to be found as common interests become superordinate and conflicts subordinate in natural groups.

PURE COOPERATION (COMMONALITY OF INTEREST)

Here we consider the case where, because of the high convergence of members' interests, there is no problem of *outcome distribution*. In this setting, problems of *response distribution* arise as a consequence of the pattern of outcome interdependence. Depending on the nature of the contingencies between responses and outcomes, some or all of the members may be required to make certain responses if good outcomes are to be attained. The requirement may be disjunctive in the sense that only some of the members need to make the proper responses. For example, in the extreme case of disjunctivity, the group receives credit if any single member produces the correct answer. Or the task requirements may provide for a particular "executive" or subset of executives who must make the proper responses on behalf of the group. Or the task requirements may be conjunctive, success depending on *all* members making the proper responses. A unanimity rule is strongly conjunctive, while a majority or two-thirds rule is weakly so. A strict division of labor also reflects a conjunctive requirement: each member must make specifically different responses. Besides such requirements as these, which concern the distribution of responses over persons, there are also requirements related to the distribution of responses over time. These involve sequencing, cueing, alternation between members, and various other specific temporal patterns. Although the temporal patterns just listed place

conjunctive requirements on the group, these patterns may of course be disjunctive, merely specifying an ordering of responses which any group member may produce.

A parallel analysis can be made of information dependence and its implications for *information-distribution* processes. Let us imagine all the communicative acts that the members might exhibit, including statements, questions, receptivity sets or orientations, indications of agreement, of disagreement, etc. Let us evaluate the consequences of each combination of these acts in terms of the resulting levels of stability of attribution for the several persons. These levels may covary over the various combinations; that is, there may be positive correlations among the various members' levels of stability for the many different information-exchange events that might occur. Such would be the case if they had similar, compatible, and/or complementary information. An exchange that increased the attribution stability for one member would have the same effect for another, and a comment destabilizing for one would have a similar effect on others.

With high compatibility or complementarity of information, the problem of information distribution is merely to assemble information in order to achieve an acceptably high level of stabilization with regard to the task. Information exchange can be expected to occur if the members can achieve a higher level of stabilization through communication with one another than by way of their alternative information sources. Given that this is true, the particular pattern of exchange that will yield the best stabilization will vary according to the pattern of contingent relationships between stability and communicative acts. Here, as in the analysis of outcome contingencies, the concepts of disjunctivity and conjunctivity are useful. The extreme case of disjunctivity would occur when any member is capable of raising all members' levels to the maximum simply by making the proper communicative act. A weaker case of disjunctivity is that of the "expert" who by the appropriate comment can raise all members' levels. Conjunctive information-distribution requirements arise when the relevant information is distributed among the members in different, non-overlapping subsets. A weaker conjunctivity requirement might demand that two or three members combine their respective sets of information in order to produce a stabilizing effect for themselves and all the others. Such requirements have obvious implications for the communication procedures, patterns, and nets that are desirable for maximum mutual stabilization. Some of these will be considered below: for example, ensuring that the expert participates, encouraging minority communications, and ensuring widespread participation.

A different set of problems arises when the levels of stability are noncongruent over the set of combinations of communicative acts. (These "cognitive conflicts" are somewhat analogous to the problems of distribution of outcomes when the outcomes of the persons are distributed in a noncorrespondent manner, that is, are negatively correlated.) When information interchange occurs, one person achieves stability only at the expense of another's (at least temporary) instability. Questions arise as to (1) each member's tolerance for instability, (2) tendencies for destabilized members to break off further interchange, (3) possible discussion "paths" or sequences that minimize sharp destabilization, and (4) destabilization directed only at those members whose contributions can be of little value anyway. These and similar specific problems will be discussed below.

We cannot consider the topic in detail here, but there are a number of interesting aspects to the interplay between outcome-distribution, information-distribution, and response-distribution problems.

The Bales and Strodtbeck (1951) phase hypothesis suggests that at least for certain kinds of problems (those they refer to as "full-fledged") the information-distribution process precedes the response-distribution process. The present conception of *information-distribution* processes (which would include asking for and giving information; providing problem-solving formats, rules, procedures, and perspectives; and suggesting answers, solutions, and judgments) would seem equivalent to their categories of *orientation* and *evaluation*. Our conception of *response distribution* (which includes directions, commands, instructions, and other forms of response specification) seems equivalent to their category of *control*. Their evidence indicates that the activity in the first two categories reaches its peak sooner in the course of the problem discussion than does that of the last category (control). The final phase, consisting of *positive and negative reactions*, seems closely related to *outcome-distribution* processes, including the application of power.

With these introductory and general considerations behind us, let us now review some of the studies related to group problem solving and some of the generalizations they suggest about the information-distribution process. We will first consider the case of complementary information and then the case of conflicting information, followed by a brief consideration of response-distribution problems.

COMPLEMENTARY INFORMATION

In this section the situation under consideration is that of incomplete information among the group members. It is assumed that the various members have different but compatible pieces of information or different amounts of the same type of information. Hence, information exchange becomes essential for problem solution. Since the discussion is still restricted to the case of pure cooperation, the class of groups being considered will be generally characterized by high degrees of interpersonal trust, information exchange, and acceptance of information (Deutsch, 1949a, 1949b; Zander and Wolfe, 1964). Though information will be exchanged and accepted more willingly than in competitively organized groups, the present aim is to identify some of the factors responsible for variations in this generally high level of exchange and acceptance.

CONDITIONS OF INFORMATION EXCHANGE

Planning

Particularly where the task demands impose a strong conjunctive requirement on the group, some planning of communication procedures may be necessary to ensure optimal information exchange. Shure *et al.* (1962) studied five-man groups working in an "All-Channel" network on the common-symbol problem. Some of the groups were afforded separate planning periods; that is, they were permitted to communicate anything they wished for two minutes between each task trial, but were permitted to send only task-relevant messages during the trials. Other ("cotemporal-planning") groups were permitted to communicate anything they wished during the task trials. The remaining ("no-planning") groups were not allowed to communicate anything but task-relevant messages. The groups given separate planning periods were far more successful in evolving an efficient organization for information transmission

(and were significantly faster in solving the problem by the last trial) than were the other groups. The "cotemporal-planning" groups appeared to have great difficulty in organizing themselves; the authors comment that the pressures of the immediate task requirements seemed to be irresistible and apparently interfered with group planning.

The mere availability of a separate period for planning does not, of course, ensure effective planning, as Guetzkow (1960, 1961) has shown. In his research with five-man groups in a Circle network, he permitted all the groups to communicate about procedural matters between trials. One of the most important characteristics of the groups that were able to organize themselves was the high frequency, during the intertrial intervals, of very *specific* proposals about who should communicate to whom. Frequencies of more general proposals (for example, "Why don't we send all our messages to one person?") did not differentiate the more from the less efficiently organized groups.

When massive amounts of information must be distributed and collated rapidly, the inefficiency of "unorganized" groups may become extreme. Shelly and Gilchrist (1958) studied this phenomenon in four-man groups in Wheel and comcon (All-Channel) networks. The groups worked at eight similar problems each requiring the distribution of four items of information. In one variation, the problems were presented one at a time; in another, all eight problems were presented at once as a single problem. It is not surprising that the groups in both networks had great difficulty in dealing with the "massed" load of information in the latter condition. The authors observe that these groups were handicapped by an inability to organize their information distribution, and report that in these groups far more messages were sent than was necessary: subjects would forget to send an item or would forget to whom they had sent one and would duplicate it. Much time was wasted in information seeking, an activity unnecessary in optimally organized groups.

It seems desirable that the persons more informed about a problem should play more active roles in organizing the group for information use and exchange in work on that problem. Something of this sort is suggested by the investigations of Hemphill and his colleagues (Hemphill, 1961; Hemphill *et al*, 1956). They asked whether persons with expertise will attempt to exercise leadership, by which they mean "to initiate or to make a change in the form of the interaction which the group is to use in its mutual problem solving activities" (1961, p. 213). Their evidence (from an experiment by Shevitz, described in Hemphill, 1961) indicates that members who have more technical knowledge (acquired before the experiment) do indeed attempt such leadership more often than their less informed colleagues. However, equivocal results were derived from an experiment in which group members were supplied with different amounts of relevant information during a training period within the experiment. There was no overall evidence of the expected relation between possession of relevant information and attempted leadership. In part, this reflected an inadequacy in the experimental procedure: the "relevant" information on one task seemed only to confuse the subjects to whom it was given. More important, possession of relevant information on early tasks (at least for certain ones) tended to encourage members to attempt to lead on later trials when they did not possess relevant information. Thus, information seemed in some instances to effect an early crystallization of leadership status and the more informed persons on later tasks tended to serve in the role of resource persons. (This problem was avoided in Shevitz'

study by forming new groups for each successive problem.) As the authors note, "the relationship between possession of information and member function in the group process can be highly complex" (Hemphill *et al.*, 1956, p. 18).

Information seeking

It is clear that the deliberate planning of a system of information transmission is an effective way of distributing relevant information through the group. It is equally clear that mechanisms other than planning may produce the same result. In working cooperatively at the common problem, group members whose information is inadequate, and who are hence informationally dependent on others, may spontaneously seek further information. Such active searching by the less well-informed members would, of course, lead to the full distribution throughout the group of the available information. There is good evidence both from studies of individuals (Driscoll and Lanzetta, 1964; Irwin and Smith, 1956; Lanzetta and Kanareff, 1962; Long and Ziller, 1965) and of groups (for example, Bales, 1950; Zander and Wolfe, 1964) that predecisional information seeking does in fact occur. But the reader may be troubled by the formulation given here in light of the conclusions reached in the recent review by Freedman and Sears (1965) of research on selective exposure to information. After evaluating the research evidence, these authors decide that, although people receive disproportionate exposure to information supporting their beliefs, there is no evidence that they prefer or seek out supportive information. Hence, Freedman and Sears conclude that selective exposure to supportive information must occur for reasons independent of its supportiveness.

It may appear that the conclusion of Freedman and Sears, that persons do not consistently seek out supportive information, may invalidate the supposition that group members will seek out compatible but complementary information. There are two differences, though, between the focus of the present hypothesis and that evaluated by Freedman and Sears. First, it will be remembered that we are here considering the group members as they attempt to attain the problem solution, that is, as they seek a degree of stabilization of attribution adequate to cope with the task. Typically they are engaged in a fluid, predecisional process of gaining a solution, rather than (as in the situations reviewed by Freedman and Sears) commencing from a more or less committed, postdecisional position. Second, we are also concerned only with distributions of compatible information and not with conflicting information, which will be treated in the next section. It is in that context, where both supportive and nonsupportive information exists, that the observations of Freedman and Sears will become more relevant.

Volunteering of information

An alternative to the seeking of information is the volunteering of it by others. The efficiency of these two modes of information transmission has been investigated by Lanzetta and Roby (1957). Three-man groups worked interdependently at a group task requiring successive adjustments to changing information. In half of the groups ("volunteering" condition), the subjects were instructed to report any informational changes over an intercom system to certain of their fellow subjects. In the other half of the groups ("soliciting" condition), the subjects were instructed to seek informational changes from certain of their fellow subjects. Though these two conditions

did not differ in the numbers of errors committed, the "volunteering" condition was more efficient in the sense that fewer messages were required and less time was spent in talking. In a later study (Lanzetta and Roby, 1960) a different task was used, again with three-man groups. The subjects were permitted freely to volunteer or to solicit information over an intercom system. This study reports a number of determinants of the effectiveness of group performance. However, one of the best of these was the proportion of information that was volunteered rather than solicited. Particularly when various bits of different but complementary (and relevant) information are distributed through the group, spontaneous volunteering of information is more efficient than being required to extract the information by solicitation.

If information is to be fully distributed throughout the group, it is imperative that all members holding relevant information have an opportunity to communicate it. As the size of the group increases, the proportion of members volunteering information decreases (Gibb, 1951). This decrease in the proportion of volunteers occurs particularly as the size of group increases from two to about seven (Bales, Strodtbeck, Mills, and Roseborough, 1951; Stephan and Mishler, 1952).

Informational interdependence

In the earlier reported study by Lanzetta and Roby (1957), one of the experimental variations was the degree of informational interdependence. In half of these three-man groups (high interdependence), each member had to obtain two pieces of periodically changing information from each of the other two members. In the other half (low interdependence), most of this information was immediately available to each subject. Under high informational interdependence it is plainly necessary to transmit a relatively large volume of information in order to manage the task requirements. The results of Roby and Lanzetta's experiment are consistent with this supposition: in the high condition, more and longer messages were sent than in the low one.

It is often the case that the members of a group are informationally dependent on one another to different degrees. The extent to which a person has control over information needed by others has implications for how active he is likely to be in the information-exchange process. For example, in the literature on communication networks (to be considered below and discussed more fully in Chapter 30), centrally located persons have been found to send more messages than their more peripheral colleagues. While we are primarily concerned in our present discussion with these information-exchange aspects of information interdependence, it is also important to note their implications for satisfaction and attitudes. More central positions in networks are more highly regarded, and their occupants are more satisfied and more likely to be seen as group leaders.

Differential control over information can also result from differences among the members in their possession of task-relevant information. This factor has been found to have consequences similar to differential location in a network. Shaw (1954b) and Gilchrist, Shaw, and Walker (1954) compared equal and unequal distributions of information within four-man communication networks. Both experiments indicate that increasing the amount of relevant information uniquely available to a person in a given position has effects similar to increasing the centrality of his

position. With more information, he solves the problem more quickly and sends more information; he also tends to have higher job satisfaction, and his position is considered as having higher status.

Communication structure

In addition to motivations to seek and receive information, there are ecological factors that affect the distribution of information. This means that for optimal distribution the environment must provide communication channels that interconnect the various members in patterns that permit rapid and accurate transmission and collation of the available information. Leavitt's (1951) classic research on communication networks is relevant to this general point in demonstrating the effects of various networks on speed and accuracy of information transmission in five-man groups working on the common-symbol problem. Carzo (1963) supplements this point in his study of seven-man groups working on a complex problem adapted from the General Electric business game. Though all the groups operated within a structure established by a hierarchical table of organization, some of the groups were given a "loose" network permitting open "All-Channel" communication. During the early trials, these "loose" groups performed more efficiently than the others, apparently as a result of being able to make rapid checks on their information. Note, though, that these "loose" groups were already organized and hence did not encounter the problem of initial organization described by Guetzkow and Simon (1955).

When the material to be communicated is highly ambiguous, producing much coding noise, redundancy of information is particularly necessary. Macy, Christie, and Luce (1953) have shown that in order to minimize errors and maximize learning under highly noisy conditions, the network must have the following characteristics:

- 1 *A mechanism for recognizing that errors are in fact occurring: each subject must be able to receive information from at least two others.*
- 2 *A mechanism for correcting errors rapidly (symmetric channels)*
- 3 *Wide distribution of participation (a decentralized network).*

Shaw (1954b) has done a study that provides results consistent with the foregoing formulation. On a relatively simple and unambiguous common-symbol problem, both his Circle and Wheel networks performed efficiently with virtually no errors. However, on a more complex mathematical problem that required much checking of information, the Wheel network made significantly more errors than the Circle.

Heise and Miller (1951) present some data consistent with the implication of Macy, Christie, and Luce regarding the virtues of well-connected communication systems. However, as in Shaw's study, Heise and Miller's results also illustrate significant exceptions related to the type of problem posed for the group. Three-man networks, varying in degree of interconnectedness, solved several types of problems through information exchange over an intercom system in which there were different degrees of background noise. The problem was to determine the relative resistance of the various communication systems to interference from noise. Two tasks involved very high information interdependence: (1) the reassembly of a master list of 25 words that were randomly distributed among the three persons, each word being

accompanied in this distribution by the word preceding it in the original list; and (2) the reassembly of a 25-word sentence where the words were randomly distributed among the three subjects, with the order in the original sentence being preserved for those words given to each subject. On both of these tasks, the higher noise levels had serious consequences (in terms of time and amount of communication necessary for task completion) for the less completely connected systems. For example, the least connected system (and hence the least efficient) was one where *A* could speak only to *B* (but not vice versa), *B* only to *C*, and *C* only to *A*. However, a notable exception to this general trend was the superior resistance to noise on the second task of a net that was only partially connected. This net had a central position (*B* could speak to and hear both *A* and *C*, but they could not speak to or hear each other) which enabled the occupant to serve as a coordinator of the others' contributions, to detect and correct mistakes, and to prevent the others from confusing each other. Apparently, this is the type of information-exchange system most appropriate for this type of less structured task requiring more ingenuity. An experiment by Faucheux and Moscovici (1960), mentioned later in this chapter, identifies another task for which centralized organization seems most appropriate.

Heise and Miller's third task illustrates some consequences of low information interdependence. At the outset, each of the three persons had the total necessary information for proceeding with the (anagram) task. Their only reasons for communication were to check answers and to distribute them to one another. (It was desirable to share answers, because a word counted three times if it appeared on each of their three lists.) Answers were produced so slowly that the necessary checking and distribution put little strain on the communication system. For this task the communication pattern made little difference in group performance. Furthermore, noise interfered with performance to about the same degree for all nets.

It is apparent, as Macy, Christie, and Luce note, that *symmetric* channels will permit detection and correction of errors. A simple experiment by Leavitt and Mueller (1951) illustrates this, but also makes the important point that symmetric channels increase the confidence of the communicators. College instructors described complex geometric patterns to their classes, with varying degrees of feedback from the students. Not only were the reproductions more accurate with greater feedback, but both the instructor and the students were more confident of their accuracy.

Cognitive similarity

Communication between persons is no guarantee that they will succeed in the accurate exchange of information. Unless they describe events in similar terms, the information exchange effected by their communication may be minimal. Two studies by Triandis (1960a, 1960b) illustrate the point. Pairs of subjects were assessed with respect to the similarity of their characterizations of pictures (in the first experiment) or concepts (in the second). In the first study, similarity in the dimensions they used to characterize the pictures was found to be positively related to their subsequent success in communicating about the pictures. In this communication, they were limited to describing dimensions (by stating pairs of polar-opposite adjectives) and to rating a picture on these dimensions. In the second study, similarity in their ratings of the concepts on given rating scales was positively correlated with their ability to infer correctly from one another's profiles of ratings which concept had

been rated. Thus, the amount of information exchanged in communication seems to depend on cognitive similarity as defined in terms of (1) the dimensions used for characterizing events and (2) the positions assigned particular events along the dimensions.

THE ACCEPTANCE OF COMPLEMENTARY INFORMATION

Since in pure cooperation members' outcomes are highly correspondent, suspiciousness and mistrust of the others' motives should be minimal. Hence, in general, information will be freely given and freely accepted, with resistance to acceptance occurring only if doubts arise about the validity or credibility of the information received. From this it seems plain that the factors affecting receptivity to information will be restricted to variables which affect postcommunication stability of attribution: for example, (1) the verifiability of a proposed solution, (2) the multiplicity of alternative solutions proffered, and (3) the expertness of the source. These will be discussed in order.

Verifiability

A proposition will be regarded as verifiable when its correctness can be tested by logical empirical operations available to the group. In some cases, proposals are quite resistive to an unambiguous test, much effort must be expended in developing an adequate test, and the confirmation or disconfirmation may entail considerable delay. In other cases, testing is immediate and can be performed independently by the various group members. This immediate and unanimous acceptance of the solution ("eureka" experience) is illustrated by the rope problem used by Restle and Davis (1962). A prisoner before an open window is equipped with a heavy rope that will reach halfway to the ground. The question is how to divide the rope to permit escape? The solution (untwist the strands and tie them together) is immediately accepted.

What is the relationship between verifiability of a solution and its veridicality? Typically they are identical (within the naive-realist epistemology of this chapter), but in special cases they may diverge—for example, in making judgments subject to the size-weight illusion, or when a nonveridical answer proves to be widely verifiable because the group members share a misunderstanding or a paucity of information about the problem.

Multiplicity of solutions

When the problem confronting the group is one that yields two or more "solutions," each providing a degree of attribution stability, the unanimous acceptance of a single solution will be very difficult to achieve. Problems that submit only to tests of "social reality," for example, the human-relations problems used by Deutsch (1949a), illustrate this difficulty in attaining rapid and uniform acceptance of a single answer.

Shaw (1963) shows another aspect of this phenomenon. Before each experimental session, one member of each three-person group was given either two, four, or six possible solutions to two human-relations problems. The member equipped with only two solutions dominated his group. He contributed a disproportionate volume of task-oriented communication and was ranked higher than the average of

other members on the quality of his contribution. The member provided with six possible solutions initiated fewer task-oriented communications than the average member and was ranked below the average in quality of contribution. One possible interpretation is that, in the latter condition, the great multiplicity of alternative possibilities made the problem more difficult, perhaps both for the specially equipped member and for the group. Too many alternatives create uncertainty and destabilization.

Expertness and self-confidence

The presence in the group of a knowledgeable member, if he has a history of success, verifiable information, a high degree of confidence, or volubility, is likely to lead to the rapid acceptance of information. In a study by Palmer (1962), male students took a 40-item multiple-choice examination for course credit. The examination was administered first privately to each student, then to four-man groups required to reach consensus on each item, and finally, again privately to each student. The course grade was based on the first score plus some fraction of the gain made on the later administrations. The higher the score on the first examination, the more influence a student exerted in causing others to change their answers to conform to his. The author attributes this effect to the known history of competence of the high-scoring students.

In an experiment by Shaw (1961), one member of a group was given information of either high or low validity for solving a difficult concept-formation task. The more valid his information, the more influential was the informed subject in causing others to adopt his proposed solutions. It seems quite possible, though, that the superior influence of such validly informed subjects derived more from their heightened confidence than from the sheer quality of their contributions. In their research on biracial problem solving, Katz and Benjamin (1960) have demonstrated a similar effect. Negroes and whites matched on a measure of intelligence worked in biracial pairs on a common task. Even though the members were given feedback designed to show equal task competence, the Negroes contributed less in volume of communication and correct answers and showed less "self-confidence" than the white members.

The confident member may also dominate the group by sheer volubility. Riecken (1958) has investigated this possible consequence of talkativeness on the acceptance of problem solutions. Four-man groups worked on two human-relations problems, and in each group the members initiating the highest and the lowest rates of interaction were identified. Next, a third problem of the same type was given to the groups. For this problem there existed a uniquely good, quite elegant solution that was unlikely to occur to the subjects. The essence of this elegant solution was given privately to either the high or the low interactor in each group. The result was that, though the high and low men had the same information, the former was able somewhat more often to get the elegant solution accepted than was the low one.

Thomas and Fink (1961) present similar results from groups working on Maier's horse-trading problem. Though this problem has a moderate degree of verifiability (and the members who came quickly to the correct answer were in fact more certain of their answers than were those holding incorrect answers), still all of the members showed at least moderate confidence in the correctness of their answers. From an

analysis of the discussion process, it is clear that the correct answer was adopted by the group only if the person who held it talked a great deal.

When a knowledgeable newcomer is added to a group, does the immediately prior success or failure of the group affect the acceptability of the newcomer's valid suggestions? Ziller and Behringer (1960) have attempted to answer this question. Three-person groups first worked on two problems, one from the Meier Art Judgment test, the other a dot-estimation task. The members communicated with one another through written messages until a group decision was reached. Half the groups were given a success induction, half failure. Following this phase, a fourth person, who was in fact an experimental accomplice, was introduced under the pretext of studying the effect of group size on decision making. The groups then performed a third task, a much more difficult dot-estimation task. The accomplice had of course been provided with the correct answer and with a convincing rationale for it. He communicated this answer and rationale to the others and thereafter wrote prescribed messages indicating his high confidence in his answer. This knowledgeable newcomer had significantly more influence in the failure groups than in the successful ones. Apparently, the successful groups perceived the newcomer as a restriction or a supernumerary or as a stimulus to disruptive change. The failure groups apparently perceived him as a possible resource or as a stimulus to improvement.

CONFLICTING INFORMATION

In the cooperatively organized group, the sources of resistance to the acceptance of information are questions about the validity of the information. When the group members hold information which they believe to be valid but which is incongruent or contradictory, cognitive conflict or dissonance may be aroused. The group then must somehow deal with this conflicting information in order to solve the problem confronting it.

In attempting to understand how the group may cope with such informational conflicts, let us begin with an uninformed individual who is confronted with conflicting information about an issue. According to Freedman and Sears (1965), the simplest hypothesis one can venture is that, in his naive state of beginning to form opinions about a certain issue, the person will seek all available information. If there are two sides to the issue, the person will prefer two-sided information over an equal amount of one-sided information. This unbiased openness to all sides of a question may not persist for long, except under special circumstances, as the following discussion indicates.

PROTECTING A POSITION

As we mentioned earlier, Freedman and Sears find no consistency in the results of research on preferences for supportive versus nonsupportive information. They are willing, however, to entertain the possibility (not yet clearly tested) that a person will seek information supportive of his position under the special conditions of strong commitment to his position, high dissonance, and low confidence. This hypothesis seems to assume that the person is attempting to safeguard a position to which he is strongly committed but which is being threatened. Posing the question very generally,

one might ask what events might occur that would enable the person to protect his position.

1. The person's position would surely be strengthened by his receiving supportive information. This should enable him to reach a higher degree of stabilization. Failing this source of protection, however, there may exist alternative ways of reducing the vulnerability of his position. The research of Zajonc (1960) on cognitive tuning is relevant to this possibility. Zajonc has shown that the cognitive structure created by the set to transmit a certain body of information is more differentiated, complex, unified, and organized than when one adopts the set to receive information. Especially relevant here is Zajonc's finding that when the receiver is preparing to receive *incongruent* or conflicting (as contrasted with congruent) information, his cognitive structure shows an increase in the proportion of *specific attributes* of the domain of discourse. Zajonc interprets this increase in specificity as a defensive adaptation of the receiver who is attempting to protect his point of view. Rappoport's (1965) research on "noncompetitive conflict" throws light on the likely success of this tactic. In a learning situation providing probabilistic cues, half of his subjects were trained individually to attain concepts by the use of highly *specific* cues (analytic procedure), and half by use of very *global* patterns (intuitive procedure). After all subjects had been trained to a common criterion of learning, pairs of analytic subjects and pairs of intuitive subjects were confronted with a new problem in which their learned cues yielded conflicting interpretations. The relevant result here is that mutual accommodation was rather readily achieved by the intuitive subjects, but not by the analytic ones. The specificity of cues apparently served to anchor the latter subjects and to protect their interpretations from change.

2. If the person increases his communicated confidence or assertiveness, it may be possible for him to protect his position either by making it seem more formidable (and hence less vulnerable) or by converting the other person to abandon his position. The role of expressed confidence in influencing others in a group problem-solving situation has been mentioned in the discussion of complementary information (for example, Shaw, 1961). Katz and Cohen (1962) have attempted directly to induce a heightened confidence and assertiveness in their research on biracial teams working cooperatively on problems adapted from the Raven Progressive Matrices. Members of the experimental pairs first worked individually on the problems. Then they were brought together for "assertion training" and required on each problem to read their earlier answers before negotiating a team answer. The problems were varied in difficulty: some were so easy that both members would spontaneously agree on the correct answer, and some were insoluble. On certain items both men had easy or insoluble versions, but on the critical items one had an easy and the other an insoluble version, distributed equally between the two members. Thus, half the time the Negro member's announced answer was the one the experimenter publicly validated, and half the time the white member's. In a subsequent task evaluating social influence, the Negroes who had been given "assertion training" (as compared with controls without training) showed superior degrees of influence over their white partners.

In a somewhat different vein, Thibaut and Strickland (1956) have studied the effects on initially committed subjects of the perception that they were a minority of one in opposition to a solidary majority. The communicated confidence of the majority was experimentally varied in three degrees. Subjects given a preliminary

"task set" induction (a set to strive for the correct answer to the problem) responded to the majority by counterposing to the degree of confidence expressed by the majority a degree of own expressed confidence that matched that of the majority. This appeared to be a device by which the subject attempted to protect his own position from being overwhelmed.

3. If the person actually obtains a partner who agrees with his view, his position will be protected. The well-known research of Asch (1951) clearly documents this point. When the Asch subject was a minority of one faced with a unanimous majority, he was very likely to yield at least occasionally to the majority pressures. On the other hand, when he had from the outset a concurring partner or when he was joined late in the experiment by a defector from the majority, his ability to resist the opposing pressures was greatly increased.

CONJUNCTIVE TASK REQUIREMENTS

When the person is committed to his initial position, it is probable that he will attempt by various tactics to protect that position. But when in a cooperatively organized group his outcomes depend on the group's success in dealing with a common problem, his orientation toward conflicts between his own views and those of others may be expected to change. His stance toward such sources of potential disconfirmation of his views will be less inflexibly defensive and more problem-centered. [It should be noted in passing that this polarity between a narrowly protectionist orientation toward *information* and a more broadly problem-solving one has interesting parallels to that described by Walton and McKersie (1965) between distributive bargaining for scarce *outcomes* and integrative bargaining to seek an expanded jointly accommodative set of outcomes.]

Under the present conditions, the group member may willingly expose himself to conflicting information, not because it is conflicting but because it must be dealt with to solve the common problem. The conflicting information may have high relevance for responding adaptively to the task confronting the group member. An experiment by Canon (1964) and a replication of it by Freedman (1965) illustrate the point we have in mind. After reaching a decision about an issue, the subjects were afforded the opportunity of choosing additional information that was either supportive or nonsupportive of their decisions. Before they indicated their preferences for these types of information, they were told either that they would have to defend their reasons for making their initial decisions or that they would have to try to rebut the opposing view in a subsequent debate. In the first case, supportive information would presumably be more relevant in preparing the case for the defense, and in the second (because one could not easily prepare a rebuttal without knowing what to oppose), the nonsupportive information should be more relevant. The results of both studies confirm this expectation: the information having greater relevance to the assigned task was significantly preferred to that having less relevance.

TO CHANGE OR BE CHANGED

Festinger (1950) has developed a theory of communication and pressures toward uniformity. In this formulation it is suggested that the group member can respond to high pressure toward uniformity either by altering his own stand or by persuading

others to join him. Though there are instances where conflicting views can be resolved in more complex ways (for example, by compromise or by achieving a higher integration of problem solution), it is undoubtedly true that the member is frequently confronted with these two alternatives.

Whether the member takes the more active role or the more passive one may have effects on the nature and quality of his contribution to the group. To be changer or changed is to be transmitter or receiver, and this has special implications. In an early study of group problem solving, Bos (1937) commented on the sharpening and better articulation of ideas that apparently result from attempting to formulate them for transmission. In his study of cognitive tuning, Zajonc devoted particular attention to the cognitive effects of adopting the transmission set. And Gagné and Smith (1962) have demonstrated the further consequences that the act of verbalizing while working at a problem has for increasing the quality of subsequent performance.

An important determinant of whether the group member takes the more active or the more passive role is his degree of *confidence* in the correctness of his information. If he is highly confident, he will be effective in changing others (Gurnee, 1937a) and will be resistant to changing himself (Kelley and Lamb, 1957). Hence, with high confidence he should be disposed to respond to uniformity pressures by trying to change others. If he has low confidence, he is likely to be receptive to changing his own view.

Whether one is changer or changed, transmitter or receiver, may also depend on whether one is a newcomer (stranger) to a group or a returning member. Nash and Wolfe (1957) found a reduction in inventiveness and innovation in the performance of strangers, and an increase in inventiveness in members who after a period of absence "abroad" returned to their home culture. It is quite possible that the stranger's role is one which in causing him to adopt the receiver role (in order to learn to operate in the strange culture) induces a cognitive structure that dampens his creativity. The returning member, however, can perhaps function creatively as the transmitter of the enriching contributions of alien ways of thinking. It is possible, of course, that differences in confidence may mediate these differing role behaviors.

Another factor influencing whether one's role is primarily changer or changed is the nature of the position taken by the group member. If he finds himself in the middle of a continuum of positions on an issue, the very complexity of his stand may be hard to verbalize and transmit, and any given part of his compound middle position may, when verbalized, cause as many to move away from him as there are others who move toward him. Furthermore, as we will suggest later in discussing the "risky-shift" phenomenon, positions may differ in the dramatic connotations of the vocabulary associated with them, so that one member may become an eloquent and influential transmitter by virtue of the power of the vocabulary afforded by his position, while another may become a quiescent and vulnerable receiver by virtue of the impoverished language of the stand he takes.

HETEROGENEOUS INFORMATION

In the situation we are considering, that of a cooperatively organized group working under conjunctive task requirements, conflicting heterogeneous information may have two different consequences for group problem solving.

1. It may lead to a broader and more differentiated (and hence more stable) base of attribution. For this heterogeneity of information and opinion to be collated and

focused on the problem, it must be maintained and, above all, expressed. From the research of Festinger (1950) and Asch (1951), it is clear that there exist powerful forces creating uniformity of opinion in small groups. The unconstrained action of such forces would, of course, tend to produce a rapid homogenization of viewpoint that would overwhelm potentially valuable contributions from minorities. The well-known study of Maier and Solem (1952) demonstrates that, at least for certain types of problem, the group leader can elevate the quality of problem solutions by ensuring that the members initially in the minority are given an opportunity to express their views. A study by Ziller (1955) suggests the value of a similar process in decision making in hierarchically organized groups. Military aircrews were given a difficult task of dot estimation. The stimulus card was presented briefly. Then a public census was taken of individual judgments, followed by a group discussion and group decision. Finally, private individual judgments were made. In one of the conditions, the public census was conducted by commencing with the airplane commander and working down through the hierarchy to the various (enlisted) gunners. In another condition, this order of judgment was reversed. The main results of the study show a greater heterogeneity of expressed opinions and a greater homogeneity of participation in the group discussion for the upward condition as compared with the downward one. (These differences fail to reach acceptable significance levels, however.) The upward condition also yielded more accurate group estimates on the task than did the downward condition. (Again the difference does not reach significance.) These and other findings of this research suggest the importance of devices for preventing group pressures (induced by the authority structure, in this case) from homogenizing opinion on a basis that may be irrelevant to the best solution.

2. Conflicting heterogeneous information may be disruptive. It may cause the problem to become too difficult for the group to solve, it may introduce distracting destabilization, and it may create insuperable obstacles to the effective synchronizing of the members on the successive parts of the problem. Maier and Maier (1957) have studied some of the consequences of uncoordinated heterogeneity of opinion in group decisions about the Viola Burns case. The authors compared two leadership techniques: a "free" one in which the leader poses the problem, conducts the discussion permissively, and tries to help the group reach agreement; and a "developmental" one in which the leader is instructed in a method of breaking the problem into five successive parts, for each of which a unanimous group decision must be obtained before proceeding to the final decision. The authors state that the problem solutions produced by the "developmental" leaders were significantly superior to those of the "free" leaders. They conclude that "developmental type discussion should upgrade quality because it synchronizes thinking and assures systematic coverage" (p. 322).

PROBLEMS OF RESPONSE DISTRIBUTION

The foregoing discussions of complementary and conflicting information are aimed at illuminating the processes by which members arrive at attributions. We now turn to the further requirement sometimes imposed by the task—that a particular conjunctive pattern of overt responses be made by the group members. Required patterns of response distribution will differ, of course, with the particular task de-

mands. To meet a unanimity rule, all the responses must be the same; to meet various psychomotor task conditions, specific distributions of different responses sequenced over time or simultaneously coordinated may be required.

The extreme case of pure cooperation continues to be the focus of this section. In a later section it will be shown that the complexities added by conflict of interest, as in mixed-motive and competitive relationships, make it difficult for the members to achieve coordination, division of labor, and various sequential patterns.

The question then is how to ensure that a particular pattern of responses is made. When each member has full information about the other members' behaviors, conjunctive requirements of coordination can be rather readily met. In the study by Jones and Vroom (1964), pairs of cooperatively related subjects were able to achieve an effective division of labor when the task was arranged to afford each member a visual inspection of his partner's work. Similarly, Wegner and Zeaman (1956) found that four-person groups were able successfully to coordinate their behaviors in maintaining a common stylus on the target of a pursuit rotor under conditions that afforded the members kinesthetic and proprioceptive (as well as visual) cues about one another's behavior.

When the rapid and efficient exchange of information is not possible, there appear to be three methods that may develop for achieving the coordination of member responses.

1. One ascendant, dominant, or highly active member may take the responsibility for providing signals, commands, or other cues that ensure coordination of the other members' responses. Ghiselli and Lodahl (1958) studied groups of size two, three, and four in a task requiring a high degree of coordination in the control of two model trains running in opposite directions on the same track (with sidings). Their findings appear to indicate that stable organization for coordinated action depends on the group's having one member who is distinctively extreme in his degree of "action orientation," as measured by the Ghiselli Self-Description Inventory. Smelser (1961) employed the same task with pairs of subjects, one member of each pair being assigned the "dominant" or controlling role. When this member was personally "dominant" and the other "submissive," as measured by Gough's California Personality Inventory, the coordination of behavior was more successful than when other combinations of personal dominance-submission were fitted to the two roles. In a quite different task (Fry, 1965), pairs of subjects were rewarded jointly for making matching responses, each subject working independently without preresponse communication. Thus, the response sequences that were necessary for attaining maximum joint rewards had to be identical. For one subject to learn how to match his sequential pattern to his partner's, the partner had to provide a regular and recognizable pattern of responses: for example, perseveration on one response, alternation between a given two, or systematic rotation among the three available responses. Dyads performing effectively on this task were those having members widely different in "ascendancy," as measured by an ascendancy-submission scale, which suggests that an assertive lead by one member gives a basis for coordinating behavior to the other. In a related area of investigation, Guetzkow's (1960, 1961) analysis of the factors leading to the differentiation of roles in five-man Circle networks emphasizes the importance of personal "ascendancy" in the emergence of a "key man." However, key men were differentiated in this respect in *both* the more effective, organized groups and the less effective, unorganized ones. For reasons that are not entirely clear, in this experiment,

as Guetzkow notes, "ascendance was *not* associated with the interlocking of roles into organizational structures" (1960, p. 699).

2. A second mode of facilitating coordination in groups having inadequate exchange of information is the provision of an executive role in the group structure. A study by Roby, Nicol, and Farrell (1963) demonstrates this point. In one of their experimental variations, four-man teams of airmen were assigned a task having highly conjunctive task requirements with several different, equally acceptable response coordinations. Half the teams were given instructions creating a "centralized" executive structure (in which one member collected all the information and issued directions to the others); the other half of the teams were given instructions designed to create a "distributed" structure (in which each member solved his part of the problem and the part solutions had to be collated without any member's having an "executive" function). The results of this research show that the most effective coordination was attained by the "centralized" structure when the man appointed to the executive role was the most proficient of the four during the practice period. When the executive was the least proficient, the teams governed by a "centralized" structure were less effective on the coordination task than the teams under a "distributed" structure.

Leavitt's (1951) well-known research on communication networks points to similar conclusions. His most centralized networks (in which the most central member typically receives information from the peripheral positions, essays a solution, and distributes the solution to the peripheral members) produced fewer errors and exhibited greater speed, on the group's fastest trial, than did the less centralized networks. Finally, McCurdy and Eber (1953) report a study in which triads work at a modified Yerkes apparatus. Each subject controls two two-position switches; changing the position of exactly one of the six switches is required to solve each problem. Half the groups were instructed to work at the problems democratically, to reach decisions through discussion; in the other half, one member was appointed to be the leader, who dictated the responses of his colleagues without discussion. Cross-cutting this experimental variation was one of group composition: half the groups were composed of authoritarian subjects (as measured by the *F* scale), and half of non-authoritarian subjects. The results of this study show the authoritarian organization (with an appointed leader) to produce more effective coordination, in terms of errors per unit time, than the democratic organization. However, this difference is created mainly by the extremely high frequency of errors contributed by the democratic organization composed of authoritarian subjects.

3. A third way of producing coordination of behavior in groups working under poor communication of information is through the importation or in-service learning of various simple rules. This topic is treated more fully in a later section. At this point it may be sufficient to say that such simple rules, when (by chance or tradition) they are fitted to the conjunctive requirements of the task, will tend to be preserved as adaptive mechanisms.

IMPLICATIONS FOR MORALE

To be the passive recipient of signals, directions, and commands may be quite dispiriting and alienating, even when the demands of coordination are in service of the common interest. Hence it is not surprising that groups managing such conjunctive requirements under minimal information, without each member being able to develop

stable attributions regarding the task, may sometimes suffer loss of motivation. Raven and Rietsema (1957) have studied this source of disaffection in their study of Dutch undergraduates working at a dull and routine task. Half the subjects were given full information about the use to be made of their products by the three other (fictitious) members of their group. The remaining half of the subjects were given no clear information of this sort. These latter subjects exhibited less interest in the task and considerably more hostility toward their situation than did those subjects who were informed about their functional relationship with others. Collins *et al.* (1964) have reported a rather similar result in their study of the "relayer" role in a five-man Circle network. Subjects who were able to attain an understanding of the relationship between their behavior and the reward mechanisms in the situation were more "satisfied" than those whose comprehension was more limited. Finally, mention should be made of the classic experiments by Lewin, Lippitt, and White (1939) on autocratic and democratic leadership. It will be remembered that the autocratic leader's role required him to give orders about specific operations to be performed, without discussion and without explanation. Two patterns of reaction developed among the followers: one of apathy, the other of aggression.

From the observations of Rotter (1966) and Cromwell (1963), the supposition may be hazarded that group members characterized by "external locus of control" would be less subject to dissatisfaction and alienation than those of the "internal" type when required to coordinate their responses under low information.

THE INITIATION AND PERSISTENCE OF GROUP PROBLEM SOLVING

Little research has been directed at identifying the conditions under which groups adopt problem-solving orientations. In laboratory research, the group's role in determining the problem to be solved is typically passive; the experimenter assigns the task or problem and the subjects are more or less coerced into adopting problem-solving sets, exchanging and processing information. A similar docility may be found in many natural situations, in which the initiation of problem solving receives its impetus from environmental sources—for example, when a group is assigned a task by a superordinate agency or must respond to friendly or hostile overtures from another group. In all these instances, the problem is more or less obtruded on the group and little room is left for the "spontaneous" initiation of problem-solving activities.

In many cases, though, especially in natural settings, the group actively initiates problem-solving efforts, and it is important to try to clarify the conditions under which this occurs. In an earlier section we discussed some of the determinants of the *individual* problem-solving orientation, but this provides little help in understanding the conditions under which the individual will work on the group problem rather than his own problem.

It will be contended that a necessary (though not sufficient) condition for inducing an orientation to group problem solving is that all or a substantial subset of the group members fall below their comparison level for outcomes. Such a condition will result from any combination of the following factors: a too high setting of the comparison level, a too difficult task, or an organization of group problem-solving activities (generating and distributing information) that leads to an inappropriate distribution of responses.

This condition of the widespread experience of falling below the comparison level may have either of two major consequences: (1) the group may adopt or revise a problem-solving orientation in an effort to increase the total outcomes available for distribution among its members; or (2) a subset of members may seize the better of the scarce outcomes, leaving the remaining members the alternatives of adapting to reduced outcomes (by lowering the comparison level), fighting for better ones, or withdrawing from the group.

Whether a problem-solving orientation is taken or not depends first on the readiness of the group members to attempt to keep the group intact. This motivation to maintain the group appears in turn to rest primarily on the members' beliefs that common interests are large and important in relation to individual ones. In short, the members perceive a sufficient basis of correspondence of outcomes to act in unison. External causes which impair the group's performance will be perceived to affect the outcomes of all the members: they experience a common fate. French's (1941) research on organized and unorganized groups working at impossibly difficult problems demonstrates this point. The organized groups were highly cohesive athletic teams from Harvard houses and established clubs from neighborhood houses, while the unorganized groups were composed of previously unacquainted undergraduates. The groups worked at a series of problems designed to produce failure and frustration. Though the organized groups showed intense frustration, which they expressed in intermember aggression and a general disorganization of group activity, all the organized groups resisted disruption. On the other hand, many of the unorganized groups were unable to remain intact under the frustration: in some instances opposing factions formed, and in other cases members abandoned the group permanently to work on irrelevant tasks. Throughout the experimental session the organized groups maintained high levels of "we-feeling," great social freedom among the members, and a strong sense of common purpose.

The experience of a common fate in French's organized groups derived no doubt from their histories of interdependence and their abilities to meet the prior environmental demands well enough to survive as groups. A similar reaction to failure or unfavorable evaluation may be expected to occur when an external agent imposes this evaluation uniformly and impartially on all the group members. Though the consequences for group integration are even better if the group as a whole receives favorable evaluations (Berkowitz and Levy, 1956), it has been shown by Berkowitz, Levy, and Harvey (1957) that, when task motivation is high, the receipt of unfavorable evaluations by *all* members of the group produces a quite high level of group integration accompanied by high subsequent task motivation.

Consistent with the preceding argument, there is some evidence that when "stress" is experienced as common fate, increasing degrees of it may actually increase the integration of the group. Lanzetta (1955) varied the degree of stress on four-man groups working on two tasks, one involving reasoning and the other mechanical ability. Some of the groups were simply told that the interest was focused on the way groups solved problems, while at the other extreme some worked under time pressure and limitations of space and were badgered and belittled by the experimenter. As the stress increased, the ratings by observers and participants alike showed the groups to be less competitive, more cooperative, and more friendly. (The groups were judged to be most productive, however, under moderate stress.)

In French's experiment the unorganized groups frequently disrupted under frustration. Torrance's (1954) research on aircrews downed over enemy territory

during World War II or over Korea makes a similar point. Crew survival appeared to depend critically on a stable group structure and good communication procedures. Factors inimical to survival included the failure of affectional linkages, resulting in competition and disrupting hostility, and an obfuscation of path-goal relationships, resulting in immobilization of group action and an excessive concern with individual welfare.

The closer integration of the group after stress, failure, or frustration appears to depend on the perception by the group members that the agency of reduced outcomes is external to the group and that their outcomes are correspondent. When the group's outcomes are reduced by the action of a group member, the consequences may depend on the group's interpretation of the causality for this action. Jones and deCharms (1957) have shown that, when a group member's behavior is responsible for the group's failure to reach an important goal, he will be rejected if his colleagues perceive that his behavior was under his own control, but not if external causes have constrained his behavior.

A similar mechanism may have been operating in the cross-national experiment by Schachter *et al.* (1954). The experiment was conducted simultaneously in seven European countries in the guise of the first meeting of a boys' aviation club. The initial task of each club was to build a model airplane, competing under strong incentives with other clubs. The club first had to reach unanimous agreement about which of four models they would build. A preinstructed member of each club intransigently supported the choice of a plainly inferior model. Postdiscussion measures showed this deviant member to be universally disliked and devaluated. Moreover, an attempt was made to induce widely different expectations that the club would be successful in its competition with others; and in three of the four countries where this manipulation was effective, the clubs anticipating failure rejected the deviant member more vigorously than did those anticipating success. To willfully impose on a group already expecting failure the additional handicap of creating a second-rate product is intolerable.

Even if a group member does not actively obstruct the group or directly reduce its outcomes, his manner may in fact be very disruptive if it suggests an unwarranted disparagement of and withdrawal from the group's aspirations. This effect is illustrated in the research of Rosenthal and Cofer (1948) on small groups of undergraduate subjects throwing darts in competition with fictitious scores of teams of government workers. An experimental confederate who talked and behaved with an attitude of indifference and negligence, but who performed at the level of the group average, was planted in the experimental groups. In such groups, as compared with control groups without the confederate, the subjects came to have less belief in goal attainability, and their behavior suggested that they came to substitute individual goals for group goals under the disruptive influence of the uncommitted member.

When individual goals become salient, the common fate of group members is likely to become less salient and in fact less real. This may account for some of the results in the study by Hamblin (1958) on group response to an experimentally induced crisis. Groups of three, of the same sex, 25 to 30 years old, played a game somewhat resembling shuffleboard. The groups worked as teams, trying to equal or exceed the fictitious scores made by high-school students in Michigan. The rules of the game were complex: points were won only if certain conditions of execution were met, and penalties were incurred when the rules were violated. Red and green lights indicated *publicly* the occurrence of *each* member's successes and failures,

thus emphasizing individual performance. The team score was also posted at intervals. After three periods of play under the standard set of rules, "crisis" was introduced in half the groups by an abrupt alteration of the rules. The crisis groups showed signs of disruption: the frequency of helping others declined slightly, while it increased markedly in the noncrisis groups during the same period; praise for others decreased and antagonistic behavior toward both other members and the experimenter increased in the crisis groups, as did the incidence of self-oriented behavior.

These results of Hamblin are quite different from those cited above from French and from Berkowitz and Levy. Hamblin's groups had neither the stable group structure of French's organized groups nor did their members receive the uniform devaluation by an external agency, as in Berkowitz and Levy. The implication suggested is that group integration in the face of reduced outcomes will occur only if correspondence of member outcomes is maintained; when the successes and failures of individual members are easily identified, individual goals can become sufficiently prominent to reduce significantly the correspondence of members' outcomes.

Largely because that is where the data are, the foregoing discussion has focused particularly on factors preserving the intactness of the group when outcomes are sharply reduced. Even though the group remains intact, the reduction of outcomes will not necessarily lead to the adoption of a problem-solving orientation. In an important class of groups which we have elsewhere (Thibaut and Kelley, 1959) called nonvoluntary relationships, problem-solving sets are likely to be adopted only minimally or transiently. These groups (for example, oppressed minority groups) are defined as being constrained to a relationship that provides outcomes below the comparison level. In these groups, as in any groups exercising a low degree of control over an improvident environment, the members may perceive no way of altering their situation and have little alternative but to adapt to their poor outcomes by lowering their comparison levels. The study by Zander and Medow (1963), reported in detail in a later section, appears to demonstrate this process in the laboratory: groups that failed persistently at a difficult task gradually lowered their group level of aspiration and, in effect, abandoned their efforts at group problem solving. In time, members of a group so unable to cope with the problem will find themselves above their adaptively lowered comparison levels. And, in fact, only in a group with resources capable of developing and distributing task-relevant information will the members be able to set and maintain comparison levels sufficiently high to prevent this kind of apathetic adaptation. Hence, an implicit condition for adoption of an orientation of group problem solving is the perception of the members that they possess sufficient informational and behavioral resources and are able to organize for their effective use in sufficient degree to enable them to solve common problems.

INFLUENCE PROCESSES UNDER CONFLICT OF INTEREST

In the previous section, we concentrated exclusively on instances of pure cooperation, in which no conflict of interest existed. In the present section the complexities added by noncorrespondent outcomes will be considered. We turn first to a brief discussion of processes of social influence in the case of pure competition, and then to an analysis of the mixed case in which competitive and cooperative elements coexist.

PURE COMPETITION

Here we are concerned with the extreme case of perfect negative correspondence of outcomes, the zero- or constant-sum game. Even if, as in game theory, it is assumed that both parties have complete knowledge of the matrix and its values (that is, each party knows his own and the other's response repertoires, the response contingencies, and the outcome values), there still remains a basis for informational interdependence in pure competition. To attempt to gain a competitive advantage, it is useful to each party to be able to predict the future behavior of the other in order to prepare the best countermoves. Hence, each rival party is likely to attempt to gain information about the other's intentions, alternatives, etc., while withholding information about his own. Such orientations to gain and to withhold information mean that espionage and security-mindedness will characterize this type of relationship. Pure and mixed minimax strategies may be regarded as techniques for rendering useless or protecting against the other's espionage.

Furthermore, in the interest of preventing the other from gaining accurate information about one's own intentions and alternatives, each party may be inclined to communicate false information to the other. Such deceit may take the form of attempting to mislead the other about the precise nature of one's own imminent acts or, more generally, about the nature of the relationship. The latter form of deceit would be aimed at inducing the other to perceive a common interest where none exists. In such a climate of mutual deceit, suspiciousness and mutual distrust may be expected to flourish.

Hence, although informational interdependency may exist, the mutual distrust in pure competition seems to provide no basis for influence through the transmission of information (persuasion). Influence through appeals to such norms as those governing equity, fair sharing, and loyalty would seem to imply (if the normative basis were mutually accepted by the parties concerned) that there existed an element of common interest in the relationship. There seems to remain, then, only one basis of social influence in pure competition: the application of raw power. If issues are to be resolved in pure competition, the process must be one, to use the language of Arrow (1951), of internal or external "dictation" and not of "rationality."

Though, by virtue of its conceptual simplicity, pure competition may be instructive to examine, instances of pure competition are likely to be exceedingly rare and ephemeral. Moreover, since the parties involved confront no common problem, pure competition is not directly germane to a discussion of group problem solving.

Consider the preliminary or "cold war" phases of a relationship of pure competition between two parties. Given the costs of espionage and security and the heavy investments in preparations for aggression, it is likely that both parties will find themselves below their comparison level during this phase. The question arises: why does the relationship continue to exist?

Though there may be many answers to this question, two are prominent:

1. Both may remain in the relationship because both believe they can win the competition. In the case of intergroup competition, there is evidence (Blake and Mouton, 1961b) that each group comes to overvalue its own products; this overvaluation probably extends to instruments of aggression and may lead both groups to overestimate their chances of victory. However, if the relationship is truly competitive, this autistic phase must be unstable, since in pure competition the issue

must come to a clear test in which one party wins, or at least gains at the expense of the other. If no test ever occurs, or if the test is so ambiguous that the issue of victory remains unresolved, the relationship is not one of pure competition.

2. Both may be constrained to the relationship because of having no good alternatives—for example, when withdrawal from the conflict would result in a serious loss of face. In this event, the correspondence of negative outcomes contingent on withdrawal provides a commonality of interest which characterizes not pure competition but the mixed case to be discussed in the next section.

In the laboratory, subjects may also feel constrained (by norms to comply with the experimenter's instructions) to remain in a competitive situation that is distinctly unpleasant to them. A study by Exline (1963) suggests that subjects may attempt to reduce the conflict imposed on them by the simple expedient of refusing to look at one another. Exline finds that, in competitive situations, as compared with non-competitive ones, female subjects high in need for affiliation sharply reduce the incidence of mutual glances. Such mechanisms may be thought of as revealing a common interest in avoiding, denying, or resisting the polarities of pure competition. Another study by Exline (1962) shows what may be considered to be a different manifestation of the same aversion to conflict. All-male and all-female groups worked on a potentially conflictual task requiring the coordination of plans and effort. The female subjects, especially those high in need affiliation, transmitted messages containing more personal reference and less reference to decision issues than did the males. Exline interprets this result as reflecting a disposition among women and the highly affiliative to avoid issues that are potentially disruptive or conflictual.

MIXED-MOTIVE RELATIONSHIPS

Though the prior discussion has dealt at some length with states and processes of pure cooperation and of pure competition, the groups most commonly encountered either in or out of the laboratory are undoubtedly mixed cases in which elements of both cooperation and competition are intermingled. Several examples will illustrate the kinds of relationships comprising the mixed case:

1. *The group may acknowledge and confront a common problem and yet, in attempting a solution, the group members may find themselves in competition for acclaim, prestige, or prominence.*
2. *In bargaining about a division of rewards, the negotiating parties may discover that it is in their common interest to minimize time or "break-off" costs or to identify particular agreements which will improve their joint profit.*
3. *In an informal conversation there may be a temptation to be open and natural and thus perhaps to receive veridical feedback about one's attributes and worth and, on the other hand, to exploit the other's openness by criticizing, derogating, or showing one's own superiority, that is, by playing "games" in Eric Berne's sense.*

The reader will note that the outcomes of the persons involved in these examples are partially correspondent and partially noncorrespondent. Hence, each person may be said to be in a "mixed-motive" situation (Schelling, 1960) in which he must address himself more or less simultaneously to problems defined by the common

group interest as well as to those defined by the conflict of interest between himself and others in the group. Thus, he may strive cooperatively to maximize the joint profit accruing to the group, while at the same time making provisions that his interests will not suffer in the division of these profits, these two activities corresponding respectively to "integrative" and "distributive" bargaining (Walton and McKersie, 1965). While in "classical" group problem solving it is assumed that the group members are guided primarily by the common interest in pursuing the problem solution, in the mixed case such efforts to satisfy the common interest occur in the company of other competing private or subgroup interests. It will be seen that this conflict of interest creates special difficulties in the management both of the outcome-distribution process and of the information-distribution process.

EMERGENT PROBLEMS IN THE MIXED CASE

The element of noncorrespondent outcomes in mixed relationships creates the basis for outcome control, though, of course, the element of correspondent outcomes reduces the usability of this control (Thibaut and Kelley, 1959, Chapter 7). In addition, when informational interdependence exists, a basis is created for informational control. Hence, in the mixed case there usually exist two broadly different bases of influence, and the group member must in some sense "decide" which to use.

The group member in the mixed case is confronted with an additional kind of choice. On the one hand, when he uniquely holds valuable information, the demands of noncorrespondent outcomes may motivate him to conceal or distort that information in an effort to improve his share of the available outcomes (status, profits, etc.). On the other hand, the demands of correspondent outcomes may dictate that he transmit the information in the interests of solving the common problem.

Two bases of influence

In the mixed case, when there is both outcome and informational interdependence, the overt and covert modes of influencing and of being influenced can become quite complex. For example, when one seeks to induce a change in another, he may frame his message, explicitly or implicitly, in terms of outcome control (*threatening* or *promising* certain consequences *he* will cause) or he may put it in terms of information (*predicting* consequences the *environment* or task will cause). Similarly, a group member may conform to the developing consensus for outcome reasons (to attain or maintain high outcomes) or for informational reasons (to attain or maintain a high level of stability in his attributions).

This distinction between control exercised through outcomes and through information appears to parallel in important respects the distinctions between reward and coercive power versus expert power (French and Raven, 1959), normative versus informational influence (Deutsch and Gerard, 1955), and group versus task set (Thibaut and Strickland, 1956). Generally similar, too, is Skinner's (1957) distinction between "mands" (which imply outcome control) and "tacts" (which involve an influence attempt).

This difference in the basis of his influence produces different consequences for the influencer. When person *A* attempts to induce conformity in person *B*, *A* will find it advantageous if *B* complies on informational grounds, since this conformity will contribute to the consensus known to *A* and thus reinforce the stability

of his attributions. This gain is withheld from him if *B* makes it clear that he conforms only out of respect for *A*'s power over him (Ring, 1964; Thibaut and Riecken, 1955). Also to *A*'s advantage is the likelihood that any induced change in *B* is more dependable if it results from informational inputs which heighten the level of *B*'s stability of attribution, since now *B*'s changed behavior is maintained without the monitoring and application of sanctions required by most forms of outcome control. This advantage of informational control is closely related to that cited by Buchanan and Tullock (1962, p. 115) for political aggregates. They conclude, in effect, that where there exists a sufficient base of correspondence of outcomes to support informational control the costs of political organization are reduced, since without such "rational" control (when conflict of interest is too great) the polity can be maintained only by "exchanges" coerced by surveillant power or by means of such normative procedures as "log-rolling."

There is perhaps an additional advantage for both the influencer and the influenced in coding the influence attempt in informational terms: there is little or no implication that a personal demand is being made, while in outcome control personal demands may be so dramatized that whatever influence results is likely to be accompanied by embarrassment and resistance. Besides, informational control may be useful in emphasizing and developing any community of interest within the group, while undisguised outcome control is an open confession that interests are definitely in conflict.

The dilemmas of information distribution

If it is true that there are advantages to the use of informational control, it is no less true that there are also, in the mixed case, motivational obstacles to the free exchange of information. It is not difficult to imagine the form these restraints against information exchange might assume in the examples cited earlier:

1. *In a classical problem-solving situation, it may be to a group member's advantage to withhold important information in order to attain a better or earlier solution than his colleagues.*
2. *The "problem" may be one of negotiating a distribution of rewards as quickly as possible, avoiding unnecessary costly disputes, and pursuing any agreement that will be to both parties' advantage. To extract as large a share as possible, it is advantageous to conceal or exaggerate one's true alternatives to agreement and thus to increase one's power in the bargaining relationship.*
3. *In a conversation between friends whose relationship is dominated by a more or less playful aggressiveness, the aim of each is to gain information about the other's weaknesses and areas of vulnerability while concealing his own.*

Wilensky's (1956) study of staff experts in labor unions illustrates how important and how difficult it is in a mixed-motive situation for the expert to distribute information freely within the organization (as he must do to perform his assignment) without at the same time transmitting his unique expertise (and thus the basis of his influence) to others. In a mixed-motive relationship, the expert is thus under pressure to be open about information and at the same time secretive about the techniques employed in generating it.

These examples highlight the restraints against full communication, but there are strong counterconsiderations. When the cooperative aspects of the relationships are salient, information exchange will be seen as valuable in solving the common problem, through facilitating the processes of information and response distribution, and thus ultimately in maximizing joint outcomes. Taken together, the common and conflicting interest components create dilemmas for the group member over being open versus secretive, being honest versus deceitful, being trusting versus distrustful.

Consider the last dilemma: trust versus distrust. The recipient of a persuasive communication has always to evaluate explicitly or implicitly the validity of its informational content. In accordance with the earlier discussion of causal attribution, he will trust a communicator when he is satisfied that the content of his message derives from sources external to the communicator (who is simply a mediator of fact). But he will not be trusting when he has grounds for inferring that sources internal to the communicator (for example, his private motives) are responsible for the content. Thus it is not surprising to find evidence (Hovland, Janis, and Kelley, 1953) that the communicator who is obviously a propagandist is relatively ineffective. Similarly, in classical group problem solving where members have status to gain from making large and distinctive contributions to the solution of the common task, the perceived cause of a contribution takes on additional importance. For the group member, it is a question of whether a given comment is motivated by task or by status considerations, whether it reflects a task orientation or a status orientation. Obviously the effect of any given contribution on a member's stability of attribution about solutions to the common task will depend on his answer to this question.

SOME INVESTIGATIONS OF GROUP PROCESS IN THE MIXED CASE

In this section we will review briefly some of the principal studies of group process in mixed relationships, in which the motivational mix is determined variously by properties of the reward structure, properties of member orientation, the intrusion of status effects into group problem solving, and the combination of intragroup and intergroup processes.

Variations in reward structure

One of the first major studies of the effects of variations in reward structure is that of Deutsch (1949a), in which outcomes to members of five-man groups were experimentally contrived to be either positively correspondent (cooperative groups) or negatively correspondent (competitive groups). In a sense, both types of groups represent the mixed case. In the cooperative groups, though they were evaluated as groups and each member of the group received the same formal evaluation, there must surely have emerged some informal competition among members for status, etc. Nevertheless, the mixed case seems to be more adequately reflected by the competitive condition (though admittedly the mix is weighted toward competition). In these groups, the members' *individual* contributions to a *group* solution were ranked in order of excellence. Thus, though the members faced a common task to which a group solution was required, their main outcomes were dependent on success in a competitive struggle for individual prominence.

The results of this experiment are sufficiently well known that a selective résumé of them should be adequate for the present purpose. Compared with cooperative groups, the competitive (mixed-case) groups showed:

1. *Less intermember influence, less rated "acceptance of others' ideas" (probably reflecting less effective information control).*
2. *Greater rated difficulty in communicating to and understanding others, greater rated communication difficulties, and less rated attentiveness (reflecting more difficulty in the information-distribution process).*
3. *Less rated coordination of effort, less division of labor, and poorer productivity (reflecting difficulty in the response-distribution process).*

Note that there appears to be no evidence in the Deutsch experiment directly relevant to the outcome-distribution process, since the experimenter-instructor and not the group was formally responsible for the outcome distribution. However, in a larger sense this is what the whole experiment is about.

A manipulation of cooperation and competition that is rather similar to that of Deutsch was used by Smith, Madden, and Sobol (1957). The task was a human-relations case which the groups were to discuss. The cooperative groups were informed that the discussion was to be treated as a "group IQ" or effectiveness test, and that the group's performance would be evaluated in comparison with that of other groups. The competitive groups were informed that the discussion would be treated as an intelligence test with each member's performance being rated individually. Six weeks following the experimental session, each subject was asked to recall as much as possible of the original discussion. Consistent with Deutsch's results for human-relations problems, the cooperative groups were more productive of ideas than were the competitive groups. Another major result of the study was that, regardless of experimental condition, the subjects recalled more than twice as much material derived from their own statements during the discussion than would be expected if they had recalled unbiased samples of the discussion. This suggests an irreducible individual orientation that persisted even through the cooperative condition.

An experiment by Zander and Wolfe (1964) permits a direct comparison of the mixed case with extremes of individual orientation (competition) and of group orientation (cooperation). The groups studied were "coordinating committees" in a large business firm. The experimental task permitted the buying, selling, or giving of information among members as well as the transferring of outcomes (points) among members. Experimental conditions were varied by the differential description of the nature of the test scores to be publicly posted and submitted to higher management: in the *group* (cooperative) condition, the sum of the scores of the members in the group; in the *individual* (competitive) condition, the separate scores of each member; and in the *mixed* condition, both the sum of the scores and each individual score contributing to that sum.

The results show that, compared with the individual condition, there was in the mixed case more trust of other members, a greater desire for more information, a greater amount of "procedural negotiation," and a higher average individual score. Compared with the group condition, there was in the mixed case less providing

of information to others, greater transfer of points to others, more "procedural negotiation," and a greater desire for more information. Note that the characteristics that distinguish the mixed case from both of the others were a heightened desire for more information and greater "procedural negotiation" (defined as "... an action urged on another member, an attempt to determine who should buy from E, or a negotiation over the price of ... information," p. 60).

A way of creating the mixed case by varying only the strength of individual goals is illustrated in a study by Smith (1959). Six-man aircrews worked as groups at a task, developed by Crutchfield, which required each member of the group to assemble a square from some geometric pieces. The members were able to request from one another any pieces they needed to complete their squares. It was contrived that very early in the session all six members had completed their squares. Shortly thereafter the critical trials began, in which each member received a request for a piece which was part of his completed square. The crew members were thus confronted with an appeal for help from a fellow crew member which, if honored, would destroy their own product. These critical trials were continued until each member had yielded the requested piece, or until there had been 16 critical trials. Strong individualistic motivation was induced in half of the crews by informing them that their intellectual aptitudes were under evaluation and that the results would be sent to their commanding officers. Weak individualistic motivation was induced in the remaining crews by informing them that the task was not known to measure anything and that they need not give their names. In this situation all the members can be viewed as competing for a scarce resource, and the degree of competition created will be determined by the members' individual levels of aspiration (the utility of the completed square). Since the utility of the completed square is higher for the subjects in the strong-motivation condition, they would be expected to show a higher level of competitive orientation than the weakly motivated subjects, and they should exhibit a greater resistance to yielding up the requested piece. The results bear out this expectation: only half of the strongly motivated subjects yielded the piece, while three-quarters of the weakly motivated subjects did so.

Member orientation

In the studies just reported, experimental control over member outcomes was responsible for inducing differences in member orientation. When the reward structure is less potent or clear-cut, variations in member orientation are likely to appear as a result of more or less stable dispositions of the individual members. Group members who exhibit "self-oriented needs" and "striving for individual prominence" in facing a common group task should therefore provide illustrations of the mixed case.

Three of these studies show rather clearly that an individual orientation introduces a degree of conflict into problem-solving groups. Fouriezos, Hutt, and Guetzkow (1950) studied 72 decision-making conference groups, each of which was rated for the "extent to which its process was permeated by self-oriented needs" (p. 687). The authors report a high positive correlation between this rating of self-oriented needs and the degree of group conflict, and a high negative correlation between the self-orientation rating and felt unity in the group. In an investigation

by Bass and Duntzman (1963a), sensitivity training groups of male supervisors and of female secretaries were recomposed to be homogeneous by member orientation. On the basis of this and related studies, the authors conclude that the self-oriented member's "concerns with himself are detrimental to his evaluation as a group member by his associates and to his likelihood of modifying his behavior in response to the group's needs in comparison to his own extrinsic demands unrelated to the task at hand" (p. 427). In a similar vein, Haythorn's (1953) study of four-man groups of NROTC students showed a substantial negative correlation between observers' ratings of "striving for individual prominence" and members' ratings of "group friendliness."

There is evidence too that self-orientation impairs the group's performance on the task. In the study by Fouriez, Hutt, and Guetzkow, observer ratings of "self-oriented needs" correlated negatively with satisfaction with the meeting, with satisfaction with group decisions, and with productivity (number of agenda items completed). Similarly, Shaw's (1959) study of four-man problem-solving groups reports negative correlations between the various groups' mean scores on an individual test of "individual prominence" and two measures of group performance. Nevertheless, though apparently responsible for lowering the group performance, the members high in "individual prominence" in this study made more suggestions, had more suggestions accepted by the group, and were perceived by others as having more influence on the group's decisions. Effective or not, this degree of task orientation seems surprising. (It may signify something like "L'état, c'est moi," or Shaw's measure of "individual prominence" may be sufficiently different from the other measures of self-orientation to account for this apparent discrepancy.)

Status intrusions

Bass and Wurster (1953a, 1953b) studied the influence process in small leaderless groups composed of supervisory personnel drawn from various management levels of a large oil refinery. Rank in the organization and observers' ratings of influence in the discussion showed a correlation of 0.88. When the discussion was directly relevant to company matters, the correlation was higher; and when the discussion was extraneous to company concerns, it was a bit lower. Bass (1965) further demonstrated the relationship between status and influence in a study of managers and supervisors attending a management-training institute away from the plant. The groups met for nine two-hour sessions and rated one another's influence after each session. Although no group leaders were appointed and no member was placed in the same group with his immediate superior, status in the company appeared to determine influence. After the fifth session, the group members were informed about their responsiveness to status, and the dysfunctional consequences of such reactions were discussed at some length. Though this feedback succeeded in moderating the response to status, the effects were quite temporary.

This kind of finding suggests another manifestation of the mixed case. The group member studied by Bass confronts two problems: the common group task to which he is obliged to make some contribution, and the adaptation to the demands of the status hierarchy within which he must survive. Thus there appears to be a tension in such groups between responding to the requirements of the common task and

yielding to those whose "individual prominence" is supported by eminence in the status system.

Some aspects of the research by Bass (1963) on groups of five ROTC cadets are relevant to the present context. The groups worked at a series of problems presented as part of a screening examination for admission to advanced ROTC status. In some of the groups it was arranged that the members would have unequal weights, allocated at random among the members, in evaluating the others' suitability for advanced ROTC. In other groups all members had equal weight. The results of this research appear to indicate that the unequal distribution of control over important outcomes leads generally to an increase in the correlation between amount of talking and successful influence over others. Although this correlation means that there was an overall positive relationship between attempted leadership and successful leadership, an earlier report of the same research (Bass *et al.*, 1958) gave evidence that the unequal distribution of control produced considerable conflict and a struggle for status. In any case, the imposition of an arbitrary hierarchy of control did not appear to promote task effectiveness. Though Bass does not give detailed evidence about this, the correlational findings he presents seem to indicate that the groups with uneven distribution of control were not particularly effective at the tasks.

This last interpretation of Bass's research is consistent with some findings of Exline and Ziller (1959) in which "statuses" were made congruent or incongruent. Female subjects in three-person groups worked on two problems. Four status conditions were created by varying both the voting power on the problem decision (all members equal versus a hierarchical ordering of power) and the attributed problem-solving ability of the members (all equal versus a hierarchical ordering of imputed ability). The congruent conditions were taken to be (1) that in which no hierarchy existed for either variable and (2) that in which the two variables were positively correlated over the members. The incongruent conditions consisted of (1) a hierarchy in ability but equality in power and (2) a hierarchy in power but equality in ability. The incongruent groups showed more interpersonal conflict and poorer task effectiveness than the congruent groups.

These studies of arbitrarily imposed hierarchies of control and attributed ability again reflect that aspect of the mixed case in which the member is simultaneously involved in reacting to the demands of the common problem and to the separate demands of individual adaptation to a sometimes seemingly irrational ordering of "status."

Competition between groups

The mixed case may also be produced when the common problem facing the group is that of dealing effectively with another group. Although any of several types of intergroup relationship may exist here (the first group may be concerned with protecting the second, training the second, etc.), a widespread and acute form of this relationship is the competitive one. The mixed case is then reflected in the group member's involvement in maintaining or improving his individual interests within his own group while at the same time joining his fellows in the collective struggle against the opposing group. [It is perhaps true, as Sartre (1960) contends, that in revolutionary movements and the like, the group member may become so

totally identified with the cause of his own group that all of his purely private or individual motivations vanish. Instances of such total correspondence of outcomes would not, of course, represent the mixed case.]

The most ambitious and important studies of intergroup competition are Muzafer Sherif's field experiments at summer camps in Connecticut (Sherif and Sherif, 1953, Chapters 9, 10, and 11) and in Oklahoma (Sherif and Sherif, 1956, pp. 301–328). Though these studies are perhaps too well known to warrant extensive summaries, it is worth recalling that in both of the major experiments, successive phases were arranged to permit, first, the development of ingroup friendships, norms, and structure; then, the emergence of intergroup competition and conflict; and finally, the reduction of intergroup conflict. The difficulty of managing one's position in the group while engaging in the common fight against the enemy is epitomized by the predicament of one of the group leaders (Sherif and Sherif, 1956, pp. 309–311):

A striking illustration was the downfall of Craig from the leadership status in the Eagle group as intergroup competition and conflict developed during Stage II. Craig rose to leadership during Stage I, when more peaceful activities were engaged in. But with the advent of Stage II, which required leadership that could stand in the front line in contests and engagements against an adversary, Craig did not live up to expectations. For example, he deserted the rope during the first tug-of-war when it became evident that the Eagles were losing. Several days later, he kept himself at a safe distance when the Eagles attempted a retaliatory raid on the Rattlers. Therefore, Mason, a high-status Eagle, rose steadily and took over leadership in the group with his exemplary daring and front-line action in various contests and conflicts with the Rattlers.

Hammond and Goldman (1961) have pointed out that Deutsch's (1949a) cooperative condition involved intergroup competition, and they ask whether this is necessary in order to produce the positive results reported by Deutsch for his cooperative treatment. They suggest the contrary hypothesis, that intragroup cooperation that does not entail between-group competition (all members receiving rewards according to the absolute quality of their joint product rather than according to how it compares with other groups' products) will be superior. They expected this condition to produce a "freeing of time and energy for constructive uses, which might otherwise have been used in intergroup antagonisms . . ." (1961, pp. 47–48). Their experiment, unfortunately, fails to yield convincing differences between these two conditions, but the matter seems worth pursuing.

Bargaining as group problem solving

The process of bargaining and negotiation may be viewed as a special sort of group problem solving. The task is a conjunctive one that requires *joint* agreement between the negotiating parties. Such an agreement must be mutually satisfactory at least in the sense that the outcomes attained through the agreement are superior to those attainable without the agreement, that is, from their comparison levels for alternatives (Thibaut and Kelley, 1959).

Since the task requirements are conjunctive, bargaining is in this respect like the classical group problem-solving situations having conjunctive requirements

(see, for example, McCurdy and Lambert, 1952) and unlike those having disjunctive requirements (for example, Marquart, 1955). Hence, while bargaining can be disrupted unilaterally (that is, disjunctively), it can be consummated only bilaterally or multilaterally (that is, conjunctively).

Bargaining is preeminently a mixed-motive relationship. If the interests of the parties are totally congruent, there is nothing to bargain for; and if they are totally opposed, there is no basis for bargaining. In the bargaining relationship the interests of the parties are partly in conflict (for example, their preferences are different), but there is also at least some degree of commonality of interest (both parties lose from costly negotiations or from disruption of the relationship).

Since the relationship is a compound of common and conflicting interests, both outcome control and information control may be exercised. The way the latter type of control is manifested in bargaining deserves special comment. In the pursuit of their common interests, it is often necessary for the negotiating parties to exchange information. This necessity derives from the typical circumstance that each party possesses only part of the information relevant to the solution of the common problem. Each party alone is fully aware of the values *to him* of the various options being negotiated. And only each person himself can say with any authority at just what point the offers to him become so unacceptable that he would be forced to withdraw from the negotiation. Consequently, in order to avoid mutually unprofitable actions and to attain agreements that are generally satisfactory to all sides, each party must depend on the other for information about such matters as his preferences, values, withdrawal threshold, and so on.

The bargaining parties then are informationally interdependent, and the negotiation of a viable agreement rests on their ability to exert mutual control through the exchange of information. Consider, though, how this information exchange might proceed. Assume a typical bargaining situation (as in Kelley, 1966) in which parties *A* and *B* can settle on any one of a set of "contracts" over which the values to the two parties are negatively correlated. Each party is also afforded an alternative value to which he can retire if no agreement is reached. Although by virtue of the negative correlation of their outcomes, contracts most preferred by *A* will be least preferred by *B* and vice versa, some of the contracts are viable in the sense that they will give both parties outcomes superior to their alternatives. Hence, *A* and *B* have a common interest in reaching agreement on viable contracts and in avoiding a breaking off of negotiation (which would give them their alternative values).

Let us now assume, as we did earlier, that each party knows *only* the values *to him* of the various possible contracts and alternatives; he is unaware of the other party's contract and alternative values. Only by sharing information can they identify the viable contracts and avoid the conclusion that there is no basis for agreement. Suppose *B* initiates the exchange by giving *A* a list of all the contracts that are acceptable to him (that is, all above his alternative value) and asks *A* to give him a similar list in return. *Because of the conflict of interest*, *A* could clearly exploit the information provided by *B*. Thus *A* might, for example, reply with a very abbreviated list containing only his most preferred contracts. By thus, in effect, misrepresenting the value of his alternative, *A* might force *B* to settle for a contract greatly to *A*'s advantage but only marginally superior to *B*'s alternative.

Consider also the following illustration: *B* must succeed in persuading *A* not to persist in demanding contracts in which *B*'s outcomes fall below his alternative

value, because these contracts are *in fact* unacceptable to *B*. At the same time it is quite possible that *B* will also attempt to persuade *A* that some of the moderately attractive, second-best contracts above his alternative value are unacceptable. In the short run at least, it is in *B*'s interest to do so, and even if he does not so misrepresent his threshold of acceptability, *A* may well suspect him of it. The question then arises: How can *B* succeed in persuading *A* about the truly unacceptable nature of contracts below his alternative value when *A* is likely to assume that at least some of *B*'s assertions of this sort are not to be taken at face value?

Though these examples are drawn from a bargaining situation, they illustrate once again the central problem that confronts the participants in any mixed-motive relationship in which each possesses only partial information. The question is: How can there be *mutual influence* (as there must be to solve the common-interest problem) when there is *mutual distrust* (deriving from the conflict of interest)? Though this basic question cannot be answered adequately at this time, some leads emerge from a recent experiment by Kelley (1966), who investigated a somewhat more complex form of the bargaining situation just described.

Kelley's subject-negotiators deal with this dilemma, at least in part, by compromise: they are neither entirely deceitful nor entirely honest, neither entirely open in giving information nor entirely closed, neither entirely trusting nor entirely distrustful. The use of *time* and *systematic concessions* seems to play an important role in the process of mutual persuasion. Starting with extreme, though not exorbitant, demands and trading concessions with each other seems to provide a mechanism by which they can convince one another that one of the objectively viable contracts is satisfactory. Of course, each bargainer tries to trade the smallest possible concessions on his part for the largest ones from the other. In this attempt, he exaggerates the magnitude of his own concessions and complains about those he receives. He also attempts to discover ways of making concessions that are maximally valuable to the other person at least sacrifice to himself. This last aim generates a tactic identical to that identified by Schenitzki (cited in Kelley, 1964) in his analysis of the Siegel and Fouraker (1960) bargaining situation: one bargainer tests several different contracts, all of which are about equally valuable to him, to discover whether any are acceptable to the other party, before making further concessions. This procedure serves to reduce the likelihood that unnecessarily poor contracts will be selected, although the bargainers are not particularly aware of this consequence of their actions.

It has been noted earlier that in classical problem solving in the mixed case, a group member may be uncertain about the motivation behind another member's contribution; it may be interpreted as task-oriented or as serving self-oriented ends (for example, status aspirations). Similarly, in mixed-motive bargaining, a negotiator's assertion that his back is to the wall and he can make no further concessions is subject to two causal interpretations: an external one, that the constraints of the situation (for example, his comparison level for alternatives) will not permit him to make further concessions; and an internal one, that in pursuit of his private interests he simply does not want to make further concessions. The external interpretation is parallel to the task orientation in classical problem solving, since it is based on causal factors in the common external world; the internal interpretation is parallel to the status motivation in that it reflects a causal origin within the person. Attribution analysis suggests the kinds of cues or bits of evidence by which the recipient of

influence attempts may make inferences about the causal factors involved. Particularly relevant cues would seem to be evidences of inconsistency in the influencer's behavior—what it is he seems to vacillate between, what he shows conflict about. For example, does he vacillate between breaking off the negotiation and further pursuit of agreement (indicative of his being near his comparison level for alternatives) or does he vacillate between asking for his present demands and making a concession (indicative of his being well above his comparison level for alternatives)?

Problem solving versus distributive bargaining

Walton and McKersie (1965) distinguish "integrative bargaining" from "distributive bargaining." The former entails a set of dispositions and decisions in a mixed-motive relationship which lead to increasing the total input to the group. This is generally equivalent to what we have been calling problem solving. The latter refers to the competitive orientation which is reflected in each bargainer's preoccupation with increasing his share of the present input.

Consider the person whose outcomes from the bargaining process are unsatisfactory in relation to his comparison level. What are the conditions which determine whether his orientation toward this predicament will be "integrative" or "distributive"? In general, any factors that increase the salience of a commonality of interest will tend to induce the integrative, problem-solving orientation, and any factors increasing the salience of a conflict of interest will induce the distributive orientation. In his variations on the experiment of Deutsch and Krauss (1960), Gallo (1966) has shown that substantial increase in the incentives to the bargainers markedly reduces their purely competitive behavior. One plausible interpretation of this finding is that large incentives cause the bargainers to assess more carefully the processes by which their interdependent behavior leads to fluctuations in their outcomes: the substantial incentives induce the bargainers to attend to their common interest, in this case, to avoid mutually costly obstructions of the common path.

A clear demarcation between "ingroup" and "outgroup" may be one of the important factors conducive to high salience of conflicting interests. In his field experiments with boy campers, Sherif (Sherif and Sherif, 1956, Chapter 9) has demonstrated the ease with which intergroup competition can be aroused. Sherif's research documents well the ingroup loyalties and outgroup hostilities that accompany intergroup competition. The strong tendencies of competing groups to cathect and overvalue the products of their own work, observed by Sherif, have been investigated in a series of laboratory studies by Blake and Mouton (Blake and Mouton, 1961a, 1961b, 1962; Mouton and Blake, 1962). Typically, in this research, the groups are formed from participants in a human-relations training program. After the groups have met separately for five or six two-hour sessions, an intergroup competition is contrived: each of the two or three groups is given three hours to develop a solution to the same human-relations problem, and the best solution is selected by impartial judges. One powerful effect repeatedly observed in this research occurs when the members of the groups make judgments of the quality of the various solutions. The product of one's own group is uniformly judged to be highly superior to the products of the competing groups. Bass and Duntzman (1963b) have demonstrated this same effect when two groups work in coalition against another two groups. From analytic experimentation by Blake and Mouton and by Ferguson and Kelley (1964) it appears that this over-

valuation of own product cannot be attributed simply to an instrumental distortion in the service of one's desire to win the competition, nor (though this is not quite so clear) to a clearer and more differentiated knowledge of one's own product through having worked at it for a long period. Rather, it appears to derive in some way from very strong attachments and identifications with one's own group that develop during the intergroup competition.

A somewhat different approach to intergroup competition is shown in the research by Wilson, Chun, and Kayatani (1965). A version of the Prisoner's Dilemma game was played with teams of two subjects on each side. On each of 20 trials, each team decided its play (whether cooperative or competitive) *vis-à-vis* the other team, and then the two members of each team played a parallel game to decide the distribution of whatever winnings would accrue to the team from the interteam play on that trial. After all such decisions on a given trial had been made, all ingroup and outgroup choices were revealed. The results of this study show a strong effect of competition between groups and cooperation within groups. Competitive outgroup choices in playing the game were more than twice as frequent as competitive ingroup choices. A further aspect of the results is seen in the shifts from pre-session to post-session in ratings each subject made of each of the other three. Ratings on a variety of general traits such as personality, ability, and the like showed slight positive shifts that were not significantly differentiated along ingroup-versus-outgroup lines. However, ratings of motive traits relevant to the game situation (for example, hostility, fairness, cooperativeness, generosity) showed significant positive shifts for ingroup members and significant negative shifts for outgroup members.

Results like these of Wilson, Chun, and Kayatani suggest that in intergroup bargaining the mixed motivation may tend to decompose and polarize, the cooperative orientation being directed toward one's own group and the competitive orientation toward the adversary group. Particularly when the group member is experiencing the frustrations of outcomes below his comparison level, the ordinarily manageable tensions and dilemmas of the mixed-motive relationship may become intolerable and may tend rather strongly to undergo this process of decomposition and polarization.

Similarly, in bargaining relationships among three (or more) individuals, any tendency for the mixed motivation to decompose may be facilitated by the formation of a coalition of two against the third party. In this case, commonality of interest would dominate the relationship within the coalition, conflict of interest dominating the relationship between the coalition and the third party. Again, outcomes below the comparison level may give impetus to the formation of such social structures as coalitions, which fit the requirements for decomposing the mixed motivation.

EXTRASYSTEMIC MODES OF ATTAINING "SOLUTIONS"

The foregoing analysis of group problem solving has emphasized the generating, processing, and exchanging of information within the group. The group member has been conceived of as dependent on others in the group for information unavailable to him from his own resources and/or from direct appraisal of the task. All of this might seem to imply the existence of reasonably efficient processes for developing and distributing information among group members that would heighten their

stability of causal attribution about the problem confronting them, and ultimately lead to "appropriate" distributions of responses and outcomes. It would be a mistake, though, to assume that complete information can always (or even usually) be developed and distributed. Often the problem is too difficult, relevant information is lacking, or the exchange of information is restricted. Under these conditions, the group members may attempt to cope with the task demands not by a rational analysis of information, but by importing into the problem situation rules and roles from other relationships or by simple behavioral "adjustments" or trial-and-error methods.

IMPORTATION OF RULES

In the absence of adequate information relevant to solving a problem, the group member may resort to procedures that have been adaptive in similar situations in the past. Through transfer of training or generalization, any of a variety of previously serviceable procedures, rules, or roles may be introduced into the problem-solving process.

Some of these importations seem primarily to serve the outcome-distribution process. Rules for settling conflicts of interest (for example, a "50-50" division of gains) and those governing distributive justice ("to each according to his need," "to each according to his work") appear to be of this type. Such rules, if widely accepted, provide the group with a rapid, low-cost method of resolving potentially difficult problems of outcome distribution.

Other importations appear to serve the response-distribution process. Some of Schelling's (1960) "prominent solutions" seem to be of this type. If one asks at what point on a given terrain a dispersed group of paratroopers, without intercommunication or prior agreement, would be likely spontaneously to assemble, the common response is to select a salient landmark, for example, a bridge. Leavitt (1960) has shown that the likelihood that a given response-distribution rule will suggest itself to group members may depend on the particular instances of the task they first encounter. His four-man groups worked on a series of problems in the "common-target" game which requires the four independently to select numbers from 0 to 10 that add up to an assigned target number. Teams given early targets divisible by four were more likely to adapt a rule (and set of roles) based on the "divide-by-four" principle and were able, because of the high utility of this rule, to attain all the targets with fewer tries on the average.

SIMPLE BEHAVIORAL "ADJUSTMENTS"

The second mode of coping with problems under conditions of inadequate information or restricted communication consists primarily in the adoption or emergence of various types of rules specifying response sequences. Here the process being served is clearly that of response distribution. For example, in the research of Kelley *et al.* (1962) on dyads exercising mutual fate control, it was found that even without awareness of their social interdependence, subjects were able to discover a simple method of mutually transmitting rewards. The simple rule appropriate for this situation is one of "win-stay, lose-change." It merely requires that each member (1) persevere on any response he makes which is followed by a positive outcome from the other member's response, and (2) avoid repeating any response that is followed by a negative outcome from the other. As, by trial and error, the two members begin to behave

according to this rule (or even according to the "win-stay" part of it), they rapidly move to a stable sequence of mutually rewarding responses. And it should be emphasized that this "cooperative" solution can be managed without communication and without understanding of the relationship.

Kelley *et al.* (1962) show that this implicit mutual adaptation is possible within a relationship of mutual fate control only when the responses of the members occur in proper synchrony. On the other hand, Rabinowitz, Kelley, and Rosenblatt (1966) have shown that the cooperative solution is *not* attainable under the same response-timing condition in a relationship where one person's fate control over his partner is met with the other's behavior control over him. These investigators did find, however, that the solution is more dependably attained in the latter type of relationship than in mutual fate control under conditions of *ad libitum* responding. If all this seems very confusing, the point to be remembered is merely that the degree to which the "win-stay, lose-change" propensities afford a basis for solving the common-interest problems presented by these relationships depends jointly on (1) the particular type of relationship and (2) the conditions governing the timing of responses.

Research by Rosenberg and Hall has similar implications (Hall, 1957; Rosenberg and Hall, 1958; S. Rosenberg, 1959, 1960, 1963). Pairs of subjects were, without knowing it, interdependent in a dial-setting task. Each one's success depended in some manner on the settings of the other person. With certain patterns of interdependence, pairs were able to learn, over successive adjustments of their dials, to make responses satisfactory to both. With other patterns of interdependence this was not so. As S. Rosenberg (1963) suggests, the results are consistent with the assumption that each subject makes successive adjustments on the basis of a simple cybernetic principle: if he undershoots on trial n , he makes a larger response on $n + 1$; if he overshoots, he subsequently makes a smaller response. These adjustments are made without respect to what the other person will do meantime (which is not unreasonable inasmuch as the subjects have little or no knowledge of each other and their interdependence). Once again, it is apparent that this simple behavioral tendency (which, incidentally, is conceptually identical with "win-stay, lose-change") affords a basis for mutual adjustment for some types of interdependence problems and not for others.

A simple mechanism identified in the research of Schenitzki, referred to earlier, provides the basis of the process by which maximum joint profit is attained in the bargaining situation of Siegel and Fouraker. In that situation, each bargainer is aware only of the value to himself of each contract. It can be shown (Kelley, 1964) that a simple process which governs the behavior of bargainers attaining maximum joint profit is that of commencing by offering contracts most (or nearly most) favorable to oneself, and then proceeding to make *systematic concessions* until a mutually acceptable contract has been reached. If one or both bargainers follow this procedure, the agreement they achieve will be among the best possible from the point of view of the pair.

A somewhat different instance of this type of simple process for attaining group solutions is that studied by Thibaut *et al.* (1960). The experimental task required members of dyads to make perfectly coordinated responses. Under conditions of stable task demands, this coordination was achieved as often by dyads prevented from communicating as by those freely able to exchange information. The processes through which such noncommunicating dyads were able to coordinate entailed the learning of simple response sequences of perseveration and alternation. However,

when the task demands were unstable (unpredictably shifting), communicating dyads performed far better than noncommunicating ones. This last finding raises again the general question: Under what conditions are these simple processes, involving imported rules of thumb and local adjustments, likely to be adaptive in promoting the general welfare?

ADAPTIVENESS OF SIMPLE PROCESSES

About the adaptiveness of simple rules imported to decide conflicts of interest or questions of distributive justice—rules serving the outcome-distribution process—little can or need be said here. For the present, it may suffice to observe that such rules can be regarded as adaptive to the degree that their use maintains or increases the interdependence of the group.

It seems clear that simple rules and behavioral tendencies regulating the process of response distribution are adaptive to the degree that the resultant pattern over the group of such individual response sequences corresponds to the pattern of task requirements. The research described above, by Rabinowitz, Kelley, and Rosenblatt (1966) and S. Rosenberg (1963), indicates that the degree of such correspondence varies greatly, depending on the entire structure of the task and timing of behavioral events. However, it is by no means clear just how this correspondence criterion can be applied short of a meticulous analysis (such as the foregoing investigators have made) of each type of situation in which such rules might operate. For example, it was shown in the research, referred to earlier, on the “win-stay, lose-change” rule (Kelley *et al.*, 1962) that use of the rule in the “minimal social situation” leads to a stable distribution of positive outcomes in dyads and quartets, but not in triads. Although the theoretical basis for this assertion can be convincingly demonstrated, it is not immediately apparent from a rapid comparison of the patterns of rule-dictated responses and the patterns of task requirements created by altering the group size.

Whatever functions are served by the simple rules, their adaptiveness appears to depend on the “ecological validity” (Brunswik, 1949) of the cues specified by the rule. An experiment by Vinacke and Arkoff (1957) on the formation of coalitions in three-person groups provides an instance of the importation of rules that probably have high ecological validity in a variety of commonly encountered situations but are inappropriate to certain of the experimental conditions. In these latter experimental conditions, coalitions are consistently formed according to an attribute of the players which is inappropriately interpreted as an indicator of social power. Subsequent research by Kelley and Arrowood (1960) on this problem suggests that subjects in the Vinacke and Arkoff experiment were responding to an irrelevant cue simply because its use was suggested by other situations in the same experiment, and because they did not have sufficient opportunity through careful analysis to understand its inapplicability to particular cases.

INDIVIDUAL DIFFERENCES IN THE USE OF SIMPLE RULES

It has been remarked that these imported or improvised rules are particularly likely to be employed when the problem confronting the group is too difficult to solve, when relevant information is lacking, or when the communication necessary for the assembly of the relevant information is restricted. The group member in such a predicament is likely to be experiencing outcomes below his comparison level

and, as observed earlier, will frequently adopt a problem-solving orientation that generates search behavior for additional information. This would, of course, be impossible if information exchange is completely restricted, but there are also, no doubt, important individual differences in the propensity to settle readily for simple rules of thumb. For example, the external-locus-of-control types, described earlier, might be especially likely to avoid a problem-solving orientation and to rely heavily on methods incorporating the use of simple rules. Furthermore, since many (if not most) of these simple rules are concerned wholly with response distribution (with alternation, coordination, queuing, matching, and sequencing routines) and not with stabilizing causal attributions, it is quite possible that prolonged and constrained dependence on such rules could contribute to the process of alienation described by sociologists.

There is no relevant evidence in the literature on comparisons between external- and internal-locus-of-control types, but Vinacke's data on coalition formation (Bond and Vinacke, 1961; Vinacke, 1959) portray differences in reliance on imported rules of thumb as solutions to outcome-distribution problems. Women more often invoke equal-sharing rules, with the effect that coalitions of two against one are often supplanted by cooperative arrangements among all three players, or persons form coalitions with others even though the former are able to gain the rewards completely independently. In view of evidence presented by Exline (1962, 1963) mentioned earlier, one might view these importations as part of the female (American college variety) strategy to avoid or deny conflict of interest.

MODELS RELATING TO GROUP PROBLEM SOLVING AND PROCESS

In recent years the construction of mathematical and logical models of processes has become a major activity and interest within psychology. Social psychology has been no exception to this trend, and group process has received considerable attention by model builders, both those within social psychology and those in other areas who have seen possible applications of their more general models to matters of social interaction. We will not consider here all models relating to social phenomena, but only some of those most pertinent to group problem solving and process.

A model is essentially a normative theory. It indicates what will happen if certain simple assumptions are fulfilled. It provides, then, a standard with which experimental results may be evaluated or compared. To the degree that the observed results correspond to or "fit" the results predicted by the model, one can conclude that the observed process *may* be identical with the hypothesized one. If in all respects the observed means, variances, trends, etc., fit the corresponding expected values, for all practical purposes (for example, for purposes of predicting the behaviors as summarized by those values) the process *is* as described in the model. Nonconformity of observed results to predicted ones indicates that the assumptions underlying the model have not been met. This then provides impetus for experimental analysis of the reasons for the lack of fit, which in turn becomes the basis for modification and improvement of the model.

Our intention here is not to present the relevant models in detail. The particulars of these models, and especially their mathematical bases, are more properly the concern of Chapter 3. Here we wish merely to indicate those aspects of group problem

solving and process for which models have been constructed. This will provide the general reader with an indication of the potential value of models as a mode of theory building in this special area. By indicating the limited domains for which models have been designed, our summary may also be useful to the mathematically oriented social psychologist in suggesting areas in which model building may be fruitful.

MODELS OF INFORMATION DISTRIBUTION

The common-symbol task employed in the communication-network studies (Bavelas, 1950) provides a simple site for investigating processes of information distribution. Each member of the group (five persons) is presented with a list of five symbols, and the problem requires that the group identify which single symbol (of six distributed among the group members) is common to all the lists. The information necessary for solving the problem is initially distributed uniformly among the group members, each having part of what is required for solution. Thus, solution obviously requires information assembly. Because the experimenter imposes the conjunctive task requirement of unanimity (every member must indicate he knows the common symbol before the group is considered to have reached a solution), there is also a problem of response distribution, but for purposes of simplicity we will syncretize here all these communication activities.

Leavitt (1951) studied the solution of this problem under conditions where communication possibilities among the members were restricted in various ways. For example, in the Wheel pattern, four of the persons could send and receive information (by written messages) only to and from the fifth member. In another, the Circle pattern, each person could send and receive messages only in relation to two others who were in effect to his right and left, respectively, around the perimeter of a circle.

For each of the four different patterns studied, Leavitt calculated the minimum number of messages required to provide the necessary information-transmission functions (and the minimum number of time units that would be required for processing this minimal number of messages, assuming each message required the same unit of time from inception to analysis). He also calculated the minimum number of time units that would be required for each network (and the number of messages that would have to be used if the minimum time were to be achieved). These calculations, based on total knowledge of the networks and performed at the analyst's leisure (as is customary in model construction), provide baselines for evaluating the various groups. They indicate the maximum performance possible for a given network, and assume an optimal organization of information-distribution activities among the members. Although Leavitt did not systematically compare his obtained results with these criteria, it is clear that some of the observations depart sharply from the "ideal." For example, although the Circle theoretically permits faster information dispersion (though with more messages) than the Wheel, the latter pattern proved to have the shorter average time when only the fastest trial of each group was considered. (The fastest trial presumably represents each quintet at its best and eliminates effects of irrelevancies such as misplaced or dropped messages.) The relative slowness of the Circle pattern and its members' common feeling that it could have been organized to improve its efficiency (although they found their jobs in it more enjoyable than did members of the Wheel pattern) indicated that the communication possibilities had

not been utilized to the fullest. This is not surprising inasmuch as the procedure required to achieve the minimum (three units of time) is a complex one (as the reader can confirm for himself by a bit of trial-and-error paper work). The necessary procedure would require a degree of planning and coordination among the members which they were not likely to achieve under the time pressure and communication limitations of Leavitt's experiment.

McWhinney (1963) approached the same problem with a model that is more realistic in that it takes account of the fact that each subject's view of the total communication pattern is limited, and that the time pressure of the common-symbol problem prevents coping with the metaproblem of organizing for optimal information distribution. He makes the assumption that each person's communication behavior is governed by what Christie, Luce, and Macy (1952) had earlier termed "local rationality." As McWhinney states it, the assumption has two parts: (1) person *A* does not direct a message to *B* unless *A* has information he does not know *B* has, and (2) when *A* sends a message to *B*, he sends all the information he possesses at that time. The reader will identify this as another example of the extrasystemic behavioral tendencies which persons bring into groups and which have implications for the problem-solving processes.

McWhinney's "model building" consisted of computer simulation of several networks, with the communication acts of the simulated members being governed by local rationality (and random selection among alternative communication targets equally indicated by that assumption). The simulation provides an indication of how a Circle network would operate if the members behaved only according to these assumptions and do not, for example, organize themselves into a "chain" pattern by systematically failing to use the channels between two of the members. As it worked out, the average number of time units predicted by the simulation was less than half the average time actually required by Circle groups who had not adopted the chain pattern. McWhinney explains this departure of the obtained from the expected results by the existence of yet another communication tendency that subjects import into this situation and that is particularly inappropriate for the Circle. This is "relay behavior," which consists of a person's withholding information until he can pass on an accumulation of messages. Direct evidence for both this relay behavior and the "locally rational" pattern of immediate communication to all possibly uninformed receivers has been obtained in various experiments. The effects of these simple mechanisms provide an interesting illustration of the appropriateness of some importations and the inappropriateness of others. It has also been shown that the locally rational pattern of behavior is not equally appropriate with all network patterns (Christie, Luce, and Macy, 1952). This is similar to the point we made earlier about the differential appropriateness of the "win-stay, lose-change" behavior tendency, depending on the pattern of interdependence and conditions of response timing.

Zajonc and Smoke (1959) have developed a fascinating model that deals with a special aspect of information distribution. This concerns the question that might in an earlier day have been referred to as "group memory," specifically: How should a number of items of information be distributed among the members of a group so that as many items as possible will be recoverable at a later time? The model is developed for collections of individuals working independently. It is not intended to apply to cases of group interaction but is a deliberately simplified case against which to

evaluate more complex instances. The assumption of independence also avoids the problem of response distribution. An item is considered to be remembered by the collectivity if *any* member recalls it. Thus, the model views the N members as constituting N separate storage capacities, and at the time of recovery an external agent who knows the original list of items scans the outputs to see which items are mentioned at least once by the various recall agents. Thus, no distinction is made between error of recall and sheer failure of recall. This distinction would be quite important, of course, if the recall process entailed group discussion of each item and achievement of some kind of consensus as to its presence or nonpresence on the original list.

The problem of the Zajonc and Smoke model is to strike a happy medium between minimizing memory load for each person (because the more you ask him to retain, the smaller the proportion he will recall—an empirical result) and maximizing the number of different people who are given each item (because the more persons given it, the more likely at least one will recall it). Zajonc and Smoke's mathematical analysis leads to the unexpected conclusion that each person should be given a number of items such that he will retain 84 percent of them. This result is shown mathematically to be entirely independent of the size of the group and the number of items involved. What constitutes 84 percent will depend, of course, on the type of material to be remembered and the span of time over which storage is required. No experimental test of the model is presented.

MODELS OF RESPONSE DISTRIBUTION

A number of models are relevant to response distribution: they assume that every member has the same information and hence there is no information-distribution problem. (As we shall see later, other models in this category assume that each person has only partial information but the information problem is ruled out of consideration by the further assumption of total restriction against any information exchange.) These models have to do with (1) the sheer occurrence of a given response (for example, the correct one) in the group, or (2) the occurrence *and spread among the members* of a given response. The first type of model assumes nothing about interaction process; it merely estimates the likelihood that a given number of persons (usually one or more) will generate a given response as a consequence of their independent problem-solving efforts. This type would be relevant to a completely disjunctive task at which the group is successful if any single member (or any subset of appropriate size) makes the correct response. The second type of model is appropriate to situations in which there is spread of influence among the members.

Two models presented by Hays and Bush (1954) illustrate these two types. They were developed to provide a basis for analysis of triadic decisions in a two-choice probability learning situation. On each trial, three persons predict (by majority vote) which of two events will occur. Their decision is considered correct if the event they predict does in fact occur. The occurrence of the two events is distributed randomly over the 100 learning trials with the probability of one of them being 0.75. It is well known from the study of individual decisions in this situation that the choice of the more frequent event gradually increases over successive trials and eventually reaches its maximum (asymptote) at a level equal to the objective frequency of that event. (In this case, individuals would be expected finally to choose the more

frequent event close to 75 percent of the time.) Hays and Bush suggest two extremely different models for the group decision:

1. *A voting model:* Each man is assumed to behave as he would if he were in the situation alone, the others having no influence on him. The three decisions made completely independently are then assembled by a simple majority rule. Assuming that each individual reaches asymptote at 0.75, it can be calculated, by expansion of the appropriate multinomial expression, that the group decision will reach asymptote at 0.84.
2. *A group-actor model:* The group is considered to act as if its guesses were those of an individual, and hence, it is expected to reach asymptote at 0.75. The exact assumptions that make this model plausible are not spelled out, but it would certainly seem applicable if the members were highly interinfluenceable so that the first guess voiced was immediately supported by the other two persons. It would also be relevant to a triad totally dominated by one member who made all of his decisions independently and then imposed them on the others. In any case, the model seems to assume that a single response such as would be generated by an independently acting individual is adopted by the other members.

Experimental results presented by Hays and Bush suggest that the asymptote for actual triadic performance lies somewhere between the two levels predicted by the two models. They take this result to mean that there is some moderate degree of interdependence among the members in their guess, which, of course, implies that they influence each other to some degree on the typical trial. This mutual influence is hardly surprising inasmuch as the pattern of events over trials is a random one. A subject is hardly likely independently to attain stabilized attributions about the sequence which would render him resistant to other subjects' suggestions. This reflects the fact that, although all subjects have the same information, none has *all* the necessary information. Consequently, information-distribution processes and mutual influence are inevitable.

A number of models have dealt with attainment of solutions to the types of puzzles and problems commonly used in the laboratory study of group problem solving. Lorge and Solomon's (1955) simplest model (members of our generation will be diverted to pleasant reminiscences by its name, Model A) has served as a starting point for many of these. It assumes that group performance is totally determined by the performance of the member who, in terms of the particular task, is most capable. Group success on a given problem depends on there being at least one member who attains mastery of the problem. The model, then, is simply an application of the binomial theorem, to predict from the proportion of individuals who can solve a problem the proportion of groups of a given size that will contain one or more such individuals.

As presented originally by Lorge and Solomon, this model illustrates the non-interaction type of model we first mentioned above, which has to do only with the occurrence or nonoccurrence of the correct answer. Thus, they describe it as taking no account of "the interpersonal rejection and acceptance of suggestions among its members" (p. 140). On this basis, the model would apply to instances where the task requirements are completely disjunctive, any member's report of the correct answer

constituting group success. On the other hand, other authors have interpreted this model as an instance of the second type, in a manner that makes it applicable to conjunctive (for example, majority- or plurality-rule) task requirements. Thomas and Fink (1961) describe this as the rational model and assume that, once voiced by any member, the correct solution will immediately be adopted by all the other members. This implies a response distribution and coordination (getting all or a majority of the members to advocate the correct solution) that is produced entirely by the transmission of attribution-stabilizing information. We discussed the necessary conditions for this phenomenon at an earlier point (p. 21).

Lorge and Solomon use the predictions from their Model A to evaluate the results from Marjorie Shaw's study (1932) which showed a higher percentage of the four-person groups to be able to solve certain puzzles (for example, the missionaries-and-cannibals problem) than of comparable individuals. The relevance of Model A to this situation is suggested by Marquart's (1955) replication of Shaw's experiment in which she compared groups not only with individuals but with collections of (noninteracting) individuals. Thus, a three-person collection was given credit for solving a problem if any one of the three solved it. [This basis for evaluating groups, now commonly used, is usually referred to as the method of "nominal groups" (Taylor and Faust, 1952), the collections of independently working individuals constituting a "group" only for analytical purposes and not in any interactional sense.] Comparing groups with collections, Marquart found that the superiority of groups was no longer so apparent as it had seemed in Shaw's original analysis.

Consistent with Marquart's results, Lorge and Solomon found the correspondence between the expected and obtained values for Shaw's data to be close enough to render Model A tenable. However, a consistent underestimate of the obtained values led them to develop a somewhat more complex model. This Model B assumes that the problem has several parts and that some persons can solve one part but not the others. Such persons will fail to solve the problem by themselves, whereas a group composed of several such persons might succeed. It would do so through a pooling effect if its membership included at least one person able to solve each part of the problem. Lorge and Solomon found Model B to provide a very good fit to Shaw's observed values, but the significance of this correspondence is open to question inasmuch as they used her observed proportions to estimate the number of parts contained in the problems under consideration, an estimate that must be included as one of the parameters of the model.

The Lorge and Solomon models were developed to predict a dichotomous outcome, solve or not-solve. Steiner and Rajaratnam (1961) have generalized Model A to apply to data in the form of continuous-scale scores. This permits testing not only the hypothesis that the group performs at the level of its most competent member (as in Lorge and Solomon's Model A), but also the hypothesis that it performs at the level of the n th most competent member. Applying their model to the McCurdy and Lambert results (1952), they are able to reject the hypothesis that three-person group performance in this maze learning task is a function of the most competent member. The most appropriate hypothesis seems to be that group performance on that task is at the level of the least competent member.

Restle and Davis (1962) developed a model which, like the Lorge and Solomon Model B, assumes that the problem entails stages or parts. The Restle and Davis "combination-of-contributions" model predicts the distribution of times taken to

attain the solution, in addition to the likelihood of success or failure. It requires obtaining estimates of the number of stages in a given problem and of the probability that the typical group member will master the problem at any given time. The group's solution of the problem is assumed to require completing the same stages that an individual must complete, but the rate of the joint completion is assumed to be increased by virtue of the number of persons in the group. A *hierarchical* version of the model assumes that the group proceeds at a rate determined by the more proficient members. This version is a continuous-time analog of the Lorge and Solomon Model B. In contrast, an *egalitarian* version assumes that less competent nonsolvers enter into the process and detrimentally affect its rate and likelihood of success at any given point in time.

Evidence from a comparison of four-person groups and individuals on three "eureka-type" problems, reported by Davis and Restle (1963), is more consistent with the egalitarian version than the hierarchical one. The group performance falls short of what would be expected on the basis of the hierarchical version (and from Model B). Sociometric and participation data are consistent with the implication of the egalitarian model, that members contribute to the discussion whether they are helpful or not and no particular persons become identified as particularly capable. The interference of the less capable members seems especially handicapping on the problems judged to entail more stages (that is, those that take longer to solve); this suggests that the interaction process may provide distractions which interfere with the attainment of solutions by the more capable members. An interesting sidelight of the group-individual comparison is that, though the former are slower, they are surer: the first group solution is more certain to be correct than is the first individual solution.

Thomas and Fink (1961) have developed a series of models for cases where the conjunctivity requirements placed on the group are not specified. They have in mind the case (and their experimental procedure is so formulated) in which the group members write a "committee report," which states each person's postdiscussion opinion. No external requirement of consensus is imposed. The models, then, must predict the distribution of postdiscussion responses over the set of group members. The first one, the *independence* model, assumes that there is absolutely no influence among the members. Thus, the postdiscussion response distribution is expected to be the same as for the same number of individuals working alone. The second model, the *rational* model, is a variant of Lorge and Solomon's Model A, as we noted above. All members are assumed to adopt the correct answer if any member attains it. This assumes that all answers obtained are communicated and that the correct one is "persuasively demonstrable" as to its correctness.

Data from groups and individuals solving Maier's horse-trading problem were used to evaluate these two models. The proportion of group members giving the correct answer after discussion was far short of the expected proportion derived from the rational model. The implication that the correct answer did not always carry the day was clearly confirmed by analysis of the discussion protocols. On the other hand, the postdiscussion response distributions also departed from those predicted by the independence model. In more of the groups were *all* members correct or *all* incorrect than that model would lead one to expect. This trend toward unanimity during the discussion (which, be it noted, stemmed from within the group and was not externally imposed) suggested that a third model was needed, a *consensus*

model. As the authors develop this model, it does not make very specific predictions as to the final distribution but simply assumes that the internal pressures toward uniformity will result in more piling up of answers than the independence model would predict, but with less convergence on the correct answer than indicated by the rational model. The exact loci of the convergences are not further specified. Interaction data from Thomas and Fink's study suggest the important role of the most talkative person in gaining unanimity. One could, of course, construct a model that would take this into account.

Thomas and Fink also propose an interesting parallel to the rational model which they refer to as a "normative" model. This assumes that opinions will converge toward a position indicated by a widely accepted and relevant norm which is made salient in the course of the discussion. This model would presumably be applicable to the postdiscussion distributions of preferences and opinions and other similar responses for which there are no objective criteria and which are linked to social norms and values. In lieu of the predominance of the response which is subject to rapid verifiability (as in the rational model), predominance in this latter case would inhere in the response most subject to "normative justifiability."

The foregoing models assume that members have relatively complete information. Other models relating to response distribution and coordination deal with the case where each person has only very limited information about the task, and where distribution of this information is not possible. We mentioned these earlier in connection with analysis of attaining mutually satisfactory outcomes in the minimal social situation (for example, Kelley *et al.*, 1962) and S. Rosenberg's analysis (1963) of two-person adjustments with confounded feedback. Both the models employed in these cases are based on assumptions about simple behavior tendencies such as are appropriate to conditions of limited information and communication. In this respect, these models are similar to the local-rationality model described above in considering McWhinney's analysis of information-distribution processes. The assumed tendencies in the present case have the character of cybernetic feedback mechanisms: feedback information indicating errors in response or poor outcomes leads to corrections or adjustments in behavior, while "hits" and "good outcomes" lead to repetitions of prior behavioral choices. The models examine the cumulative consequences of such tendencies when they are exhibited by two or more persons who are interdependent in various ways. A fuller discussion of these analyses appears on pp. 47-51.

A MODEL FOR CHOICE OF A CONJUNCTIVITY RULE

In organizing itself for decision-making activities, a group may have freedom to determine its own response-conjunctivity rules, for example, whether to decide things by plurality, majority, or unanimous vote. Buchanan and Tullock (1962) present a normative model for the individual member's preference among the many possible conjunctivity rules—his "choice of a rule of choice." The question confronting him is whether he should support the enactment of a completely disjunctive decision rule (any member's action would be binding for the entire group) or a conjunctive one, and if the latter, the degree of conjunctivity he should prefer (the number of members of the group required to commit the group to a particular course of action). Buchanan and Tullock suggest that the answer must be determined by considering a trade-off between expected *external* costs (the costs that will be imposed upon him by

virtue of the typical collective action taken) and the expected *decision* costs (the costs that will be incurred for him by the decision-making process). The first of these is seen to decline as the degree of conjunctivity increases. External costs to the individual will be high if anyone can determine the action of the group, because actions may be taken that are unfavorable to his interests. These external costs will be low (zero) with a unanimity rule, because the individual can presumably forestall any such unfavorable action. Decision costs are seen to increase with degree of conjunctivity. For example, sheer time and effort required to gain a decision increase as the amount of agreement required increases. The individual's choice of rule to support, then, involves finding the rule that minimizes these two sources of costs. "By agreeing to more inclusive rules, he is accepting the additional burden of decision-making in exchange for additional protection against adverse decisions. In moving in the opposing direction toward a less-inclusive decision-making rule, the individual is trading some of his protection against external costs for a lowered cost of decision-making" (p. 72).

It should be emphasized that the Buchanan and Tullock model applies to individual choice behavior. To apply it to the optimal rule choice for a group of persons would require an extension parallel to those mentioned below for assembling a set of individual preferences to maximize the general "welfare."

MODELS OF OUTCOME DISTRIBUTION

Consider the case of imperfect correspondence of outcomes among a set of interdependent persons, a condition which generates for them the problem of identifying the set of outcomes they will act jointly to provide for themselves. The joint control of outcomes implies conjunctivity of task requirements, and hence the problem entails response distribution. However, this distribution problem is subordinate to the matter of allocation of outcomes and may, therefore, be distinguished from the simpler response-distribution problems encountered with high commonality of interest.

Models relevant to this problem are those of bargaining behavior such as have been summarized and investigated by Siegel and Fouraker (1960; see also Fouraker and Siegel, 1963). These have been developed both for the case of complete information, where each participant knows the total set of relevant outcomes, both his own and the others', and for the case of incomplete information, where he knows only his own. For example, the marginal-intersection hypothesis for the latter case under conditions of bilateral monopoly (a two-person mixed-motive game) predicts not only that the pair of outcomes finally selected jointly will have the maximum total value, but also provides an expectation as to the division of this total between the two. The latter expectations were not empirically confirmed by Siegel and Fouraker. A simple "systematic-concessions" model (*cf.* Kelley, 1964) predicts only the attainment of maximum total outcomes. This latter model was shown by Schenitzki to fit a number of details of the bargaining process and to be consistent with correlations between characteristics of the process and degree of attainment of the maximum total.

Outcome-distribution models are also entailed in the analysis of coalition-formation processes. In fact, coalition analyses are closely akin to the bargaining models inasmuch as they yield expectations not only about the membership of coalitions but also about the division among the members of jointly achieved outcomes. For ex-

ample, Vinacke and Arkoff (1957) compare the predictive value for their experimental situation of a game-theoretic model and a model proposed by Caplow (1956). The comparison is made in terms of which pair of the three-person collectivity, if any, will coordinate their efforts and form a coalition, and in doing so, what agreement they will make with regard to a division of outcomes. Their results favor the Caplow model, apparently for reasons we have encountered before—that the game-theoretic model assumes an unrealistic degree of information about and analysis of the interdependent relationship. The interested reader may wish to consult Gamson's summary (1964) of various theories of coalition formation.

The bargaining and coalition models deal with the processes of give-and-take, exercise of power, etc., by which conflicts of interest are settled among interdependent parties. A different approach to this matter is reflected in the attempt to formulate rules by which interest conflicts can be settled without resort to such active and informal processes. This is the classic problem in economic theory of establishing a social-welfare function. The impetus for this attempt stems from the supposition that there is some general means of specifying a set of priorities for the collective actions of a group which takes account of the various members' preferences and interests in a manner they will consider to be fair and representative. As the latter terms imply, the assumptions underlying the method must be so highly reasonable to the members that *prior to its application to any specific case*, they can unanimously agree to adopt it as a rule of law for settling subsequent outcome-distribution problems.

Some of the usual methods for accomplishing this task are general voting, decisions by representative bodies, dictatorial decree, and appeal to a religious code or to convention. Many of these are considered neither fair nor representative, and others (for example, majority voting) can be shown logically to be unreasonable for certain cases. The Buchanan and Tullock model described above provides a basis for indicating for any given individual what number of persons he should prefer to see involved in such decisions, but the problem remains of combining such prescriptions for a number of different individuals.

Arrow (1951) has analyzed this problem in terms of establishing a rule for deriving a common preference ordering among a number of alternatives from preference orderings held by two or more individuals. He proves the "impossibility theorem," which states that no such rule is possible if it must satisfy only a minimal set of reasonable conditions. These include the restriction that the rule must apply to cases of three or more alternatives (there is no problem with the binary-choice case) and to every possible degree of correspondence or noncorrespondence among the individuals' preference orderings (there is no problem with high correspondence). The further conditions are that the social and individual orderings be positively associated, that the social ranking of a given pair of alternatives be responsive only to variations in the individuals' rankings of that particular pair, and that the social ordering be neither imposed nor dictated. The implications of Arrow's proof for group decisions have not been carefully explored, but it seems to indicate the desirability, if there is any great conflict of interest, of formulating group decisions in terms of two (rather than more) alternatives, or of encouraging the members to rate their strength of preference for the various alternatives rather than merely ranking the alternatives. Few if any small groups attempt to formulate "social-welfare" rules prior to undertaking their decision-making functions, but the inconsistencies that Arrow's analysis highlights undoubtedly are reflected in the dissatisfaction that occasionally arises

from the blanket application of such simple rules as majority rule. The reader is referred to Luce and Raiffa (1957) for a discussion of the Arrow theorem and of related formalized treatments of the "fair" methods for assembling sets of individual preferences and of allocation of resources.

GROUPS VERSUS INDIVIDUALS

In the earlier version of this chapter (Kelley and Thibaut, 1954), while discussing the comparison of groups and individuals we expressed concern about the aridity of the results of this research. We suggested that too little observation of process was made in these comparisons, a shortcoming which we attributed to the absence of relevant theory about group process. In this section we shall reexamine the research on this topic, particularly the more recent work, and analyze the outcome and process results in terms of the process theories we have presented so far. To the degree that these ideas are valuable in ordering the existing experiments on groups versus individuals, they may be accepted as guides in the formulation of future studies of this type, and particularly in indicating the kinds of process data necessary for adequate interpretation of experimental results.

The experimental findings may be ordered in terms of the generalizations they suggest about how group performance compares with that of individuals. As will be seen, while this comparison is an easy one to make experimentally, it is not an easy one to interpret. For any given difference found between groups and individuals, one can usually think of a number of possible explanations. Unless the investigation has been conducted with an eye to these possibilities (for instance, by gathering sufficiently detailed process and consequence data), or unless the observed difference is then subjected to further experimental analysis, there is a high probability that the statistically significant results will tell us very little about group problem solving.

The headings that follow should be considered as hypotheses rather than facts. In each case, the existing evidence is more consistent with the statement than with its converse (or than with the null hypothesis), but in many instances, the amount of relevant evidence is quite meager.

GROUP PERFORMANCE DEPENDS ON TYPE OF PROBLEM

The point here is that the relative proficiency of groups in problem solving, as compared with individuals, depends on characteristics of the problem undertaken. At an earlier time, one might have been tempted to assert that groups are *generally* more successful than individuals. However, enough of the more recent studies have obtained data about problem variations that we can begin to identify the problems on which groups are highly proficient and those on which they are most incompetent. We shall organize the studies by the level of proficiency they indicate, and then attempt inferences as to the types of problems involved at each level.

Group performance at the level of the most proficient member

As noted above, Lorge and Solomon's Model A assumes that group performance achieves the level of its most proficient member and, on that basis, the model affords a prediction of the rate of group success from rates of individual success. Their

reanalyses of Shaw's data (Lorge and Solomon, 1955), data from Marquart (1955), Tuckman and Lorge (1962), and Lorge *et al.* (1955a, 1955b), part of the data in Lorge and Solomon (1959), and data for one of Davis and Restle's problems (1963) are consistent with this model as it applies to the solving of complex problems and puzzles. Other consistent evidence comes from studies using learning tasks, achievement-test items, and social-judgment tasks. An especially clever task of the latter type, presented by Hall, Mouton, and Blake (1963), required subjects to predict the subsequent course of events after seeing only the first part of the motion picture *Twelve Angry Men*. They found that group predictions were shifted markedly in the direction of the more accurate prediscussion predictions made by individuals. As a consequence, group decisions were closer to the criterion of what actually happened than were individual decisions made after a comparable period of reconstructing and reconsidering the facts.

A number of studies provide suggestions as to the processes by which the convergence upon the answers held by the most proficient members (that is, the correct or better answers) may be expected to occur. Gurnee (1937a) compared classroom groups and the individual students in their performance on multiple-choice achievement tests. The tests were first administered individually, then by collective judgments made by voice majority votes (with a show of hands if there was an apparent tie and with revotes if a quorum did not vote on a given item). The group vote equaled or approximated the best individual score and is consistent with Model A. (It is doubtful, however, whether Model A needs to be invoked because of possible contamination of group discussion with simple reconsideration, inasmuch as the collective judgments always followed the individual ones.) Gurnee believes the results reflect the process of voting, as seems entirely reasonable in view of the weakly conjunctive rules the groups were required to meet in assembling their responses. He observed that the correct subjects were apt to respond more quickly and vigorously, and that doubtful subjects delayed until they observed the votes of the more vigorous responders. He also noted that not all subjects voted under the system of acclamation employed.

The role of confidence deriving from holding the correct position, implied by Gurnee's comments about speed and vigor of response, is also suggested by Thorndike (1938a). Twelve hundred college students were formed into groups of four, five, and six members. The tasks involved the selection of one of two alternatives: the better of two poems, the more favorable of two attitudes, the truth or falsity of various assertions about geography, economics, and current events. The subjects first made individual judgments and then discussed each of the issues for a maximum of approximately ten minutes, under instructions to try to come to a correct unanimous decision. At the conclusion of each discussion, if unanimity was not reached, a vote was taken to determine the members' judgments of the correct alternative. Thorndike presents his main results in terms of the mean percentage of problems for which the majority of the group chooses the correct answer. The mean percentage after discussion shows a significant increase over the mean percentage prior to discussion. Although the reader may again regret the absence of control subjects in the design to detect possible effects of restudy or reconsideration, this study appears to support the conclusion that group discussion contributes to an increase in accuracy. Thorndike presents some data that suggest the nature of this contribution. He observed a marked tendency for his subjects to change their individual decisions in the direction of the majority opinion of the group and also

in the direction of the correct alternative. Part of the latter tendency he finds due to high confidence on the part of subjects originally holding the correct view. Such subjects were found to swing the decision their way more frequently than other members. However, apparently not all of the "pull" of the correct answer was mediated by confidence of its holders. There was still a sizable tendency to shift in its direction when confidence was held constant. (Other possible factors—reputation of its holder, its verifiability upon cross checking—are indicated by the other studies to be discussed below.)

An interpretation in terms of correctness and confidence is also plausible for Gurnee's and Beasley's results on group proficiency in maze learning (Beasley, 1958; Gurnee, 1937b), both of whom employed informal public methods of voting in reaching a consensus. However, Gurnee offers an explanation (of his results) that requires no differential influence or responding among the members. This explanation, which is also generally consistent with group performance reaching or even surpassing the level of the best individual, is in terms of the scattering of individual errors. If the individual errors of group members are uncorrelated, then majority opinion can be correct at all choice points even though individuals make errors.

If individual errors are uncorrelated (that is, occur in regard to different aspects of the problem) and if intercommunication is permitted, it is quite apparent that they will constitute the basis of and provide a patterning to the information-distribution processes. If we assume that errors (of any single type) occur less frequently than correct answers, their proponents will appear as deviates and, accordingly, will receive appropriate influence attempts. The critical quality of these attempts is also likely to provide considerable reinforcement for withholding opinions, or at least, for stating them rather tentatively, on subsequent occasions. The often cited evidence from Shaw's study (1932) is entirely consistent with this view. Individuals and groups of four worked on a number of problems. When compared on speed of performance, the data were inconsistent; but not so when compared on accuracy. The groups produced a substantially greater percentage of correct solutions to the problems. Observation of the group process revealed on one problem, for example, that although twice as many correct as incorrect suggestions were made, the groups rejected five times as many incorrect as correct suggestions. Further, the initiator rejected only one-third as many of his own incorrect suggestions as did other members of the group. Shaw comments: "one point of group supremacy is the rejection of incorrect ideas that escape the notice of the individual when working alone" (p. 502). (As we noted earlier, Marquart replicated Shaw's study and concluded that the observed superiority of the groups may be due merely to the fact that their performance tends to reflect that of the most capable member. It should be noted that this conclusion does not necessarily reduce the importance of Shaw's observations about the corrective process in group discussion. This process may be the means by which it is possible for the most competent member to exert his effect. Given less "rational" information- or response-distribution processes, the group performance may well be quite inferior to his performance.)

Hudgins' study (1960) provides another instance of group superiority, in this case in the solution of arithmetic problems by fifth-graders. The most pertinent evidence is not presented, but from that given it seems likely that the performance of the four-pupil groups approximates the level of the best member. Hudgins'

report about the process indicates that several patterns account for this approximation: (1) other members accept the answer after its correctness has been demonstrated; (2) members compare their independently achieved answers and use consensus as a check on correctness, and (3) other members unquestioningly accept the answer if proposed by a class leader. Evidence on the last point comes from a very early study by Terman (1904) of interpersonal influence in groups drawn from elementary school classes. He found that when the experimenter asked a group of four children some questions, certain youngsters tended consistently to answer first and their answers tended to be imitated by the other students. The quick-responding youngsters also tended to be the children identified as leaders in an earlier similar experimental situation and by the teacher on the basis of her classroom observations.

Reviewing these studies from the point of view of group process, it seems clear that answers of the type obtained by the more proficient members (namely, correct answers) may attain predominance in the group decision for a number of different reasons. Some of these have to do with information-distribution processes—the means by which group members jointly achieve stable attribution about the problem: (1) such answers prove to be verifiable by the other members when checked against their knowledge of the problem; (2) such answers, on the assumption of their greater commonness, have a superior chance of becoming widely accepted in a process of consensual validation; (3) such answers provide a basis for more confident advocacy; (4) such answers tend to be presented by persons with a reputation for competency or with leadership ability. Other reasons for their eventual predominance are more closely related to response-distribution processes. For example, such responses may be able to win out in a voting process (where something less than unanimity is required) if they are very common. Such responses may even mobilize the support of persons with high outcome control, although there is no suggestion of this in the studies reviewed.

Few of the studies enable one confidently to interpret the basis on which any given response attains predominance. There is little reason to doubt that, with the types of problems employed, information-distribution processes are of major importance. Timmons' study (1939) provides clear evidence of these processes by showing their end product: convergence of individuals' private beliefs. His subjects individually read some study material concerning whether or not (and how) Ohio's system of giving parole to prisoners should be changed. Immediately before and after reading the materials, the subjects individually ranked five given solutions to the problem. Then the four-man groups discussed the problem and made a group ranking of the five solutions. Finally, the members of the experimental groups again individually ranked the five alternatives. Instead of discussing the problem, control subjects individually restudied the materials and finally, again as individuals, ranked the alternatives. The criterion of correctness was taken to be the ranking made by a group of informed experts. The observed results were that subjects in the groups were significantly more accurate in their subsequent individual rankings than were the control subjects, who had merely restudied the parole problem. It was also found that the subsequent rankings made by individuals who had participated in the discussion groups correlated fairly highly with the rankings agreed upon by their respective groups (that is, the rankings constituting the group solutions to

the problem). Thus it is clear that not only did individual judgments change, but they changed in the direction of the group consensus.

What do the foregoing points suggest about the kind of problems on which groups will attain the level of their best members? One type of problem suggested by several studies and authors has two characteristics: (1) very few steps are required for its solution; and (2) its solution is highly verifiable by all persons in possession of the original facts of the problem. From the first property, it follows that the most competent member can solve the problem about as readily in the group setting as when he is alone. Its complexity is not such as to make his efforts highly vulnerable to distraction and interferences presented by the social situation. The second condition means that, upon achieving solution, he can readily convince the other members of its correctness.

The first condition is probably the crucial one for the "best man" phenomenon to occur. Unless it is met, the appropriate response will not be available with sufficient frequency to provide a basis for the effect. However, the second condition is probably only one of several, which, given its availability, will afford widespread acceptance of the correct or best answer. Our analysis suggests the following as possible alternative conditions: (a) The solution has plurality support at the outset; this would imply that the problem is easy enough that many although not all members can solve it. (b) The solution is attained by members with reputations of high competency. This implies that the problem is of a type with which the group has had prior experience and opportunities to learn to identify the relevant ability of its members.

Group performance above the level of the most proficient member

There appear to be some problems on which groups attain better success than any component member, acting alone, is able to. For example, Faust (1959) compared groups and individuals in their performance on spatial puzzles and anagram problems. The former are of the simple one-step type noted above as being those on which groups do about as well as their best members. Faust's results are in line with this: the performance of his real four-man groups was well matched by the performance of nominal four-man collections (four individuals selected at random and given credit as a "group" for solution if any one or more of them achieved it). In contrast, the anagram problems were clearly multiple-part problems: each consisted of seven words that form a sentence, each word scrambled in its letter arrangement. Groups and individuals alike were required to proceed through the sentence in order, unscrambling each word before being able to see the next one. The real groups solved more of these problems than did the nominal groups, Faust's explanation being that the group could profit from having one member who could solve one word but not another, and another member who could solve the latter word but not the first.

Results having similar significance are presented by Anderson (1961), based on the task of making as many words as possible from the letters "afliybat" in a 15-minute time period. Anderson's two and three-person groups, composed of junior high students, exceeded the output of the best individuals in comparable nominal groups. The real groups were equal to the nominal groups when the latter were

credited with all the different words produced by the component individuals, this being entirely consistent with a pooling view of the real groups' performance. (The reader may find it confusing that pooling of complementary skills enables real groups to surpass nominal ones in Faust's experiment but not in Anderson's. This reflects the central difference between the two tasks. Anderson's "nominal" groups received credit for every legal word any one of the two or three individuals was able to discover. Thus, all of their possible contributions to a group product are reflected in the nominal groups' scores. Faust's task required solving each word in the list before being allowed to proceed to the next one. A person who might have solved one of the later words never had a chance to do so if, working alone, he was unable to solve an earlier one. For this reason, Faust's method of giving nominal groups credit for solution only if one of the designated individuals progressed through all the words on the list does not adequately reflect the potential gains to be derived from pooling of resources in face-to-face discussions.)

The assumptions about (a) problems having multiple parts and (b) members with uncorrelated deficiencies in their capabilities with respect to the various parts, were incorporated by Lorge and Solomon into their Model B of group problem solving. The point of the model is that through pooling of their partial skills and proficiencies, and canceling of their uncorrelated deficiencies, group members may be able to solve the entire problem even though no one of them can solve it alone.

The central assumption here, of independence of deficiency, is the same one noted above in regard to learning-and-recall experiments. In traversing a maze (for the second or third time), if the various group members have forgotten the correct choice at *different* choice points, they may be able, working jointly, to get through the entire maze without error, whereas any individual would make frequent mistakes.

Several studies of group learning and memory seem to illustrate this canceling effect of uncorrelated memory lapses. In a study by Perlmutter and de Montmollin (1952), three-person groups were required to learn two equivalent lists of nonsense words. One list was learned while each person worked individually but in the presence of the other two. The other list was learned while the three persons worked together as a group, with the requirements that they reach accord on each word before it was adopted to represent the group. In the latter condition, the subjects were not permitted to assign specific parts of the list to specific individuals. The results reveal that on all five trials the average group recalled more words correctly than did the average individual. In fact, the group recall scores tended to be equal to or better than the best individual scores. It is not clear exactly what factors account for this superiority of groups. Perlmutter and de Montmollin observe that, in spite of occasional instructions to the contrary, subjects working in groups may have developed an implicit assignment of certain words to particular members. This division of labor would, of course, minimize the correlation among members in their capabilities and, if it reduced errors via reduction in memory load, would heighten the pooling effect presently under discussion. In this connection, the reader will recall the Zajonc and Smoke model for the optimal division of labor of this sort.

Rather similar results are presented in a second study by Perlmutter (1953). Groups and individuals were read the story "War of the Ghosts" and asked to recall it 15 minutes later and then, again, 24 hours later. A content analysis of both group

and individual protocols obtained at the latter time indicated that recall scores for the best individuals were more often below the group scores than they were above. Perlmutter concludes that the most correct portions of the individual recall products are incorporated into the group protocol: "when one member suggests a correct segment, other members are likely to 'recognize' it even though they were unable to recall that particular portion of the story when they were working alone" (p. 368). Yet, not all of a person's correct products are included: Perlmutter found that half of his groups included one person who remembered *more* different points than did the group. We are not told whether the surplus facts were never suggested or were proposed and then rejected. In any case, the point seems to be that the group memory product is less complete than it might be, but is of very high quality. The information-exchange process (with its checking, cross checking, etc.) may work against pooling the complete set of the available individual products by admitting to the joint product only items supported, say, by two or more individuals. In this manner, the list of correctly remembered facts may often fall short of the list provided by the best member, but the error rate will also be lower than his.

A study by Dashiell (1935) appears to document this same point. He compared original witnesses to an apparently genuine accident, individual jurors after hearing the witnesses, and, after discussion, the jury as a whole. The jury report, which was restricted to those points on which the jurors unanimously agreed, was less complete than any individual report but more accurate. Thus, although the requirement of unanimity apparently reduced the number of items accepted for the jury report, it reduced the number of errors even more sharply.

Most of the studies reviewed in this section involve highly cooperative inter-member relations. In contrast, Barnlund (1959) employed a type of task which undoubtedly evoked conflicting vested interests. His results suggest the important role played by interest conflict in the checking and cross-checking processes under discussion. The series of tasks consisted of syllogisms the terms of which were designed to prejudice judgment as to which of several stated conclusions was most logically correct. (For example: some Communists are advocates of heavy taxes; all advocates of heavy taxes are conservative Republicans; therefore, *a* some advocates of heavy taxes are not Communists, *b* some Communists are conservative Republicans, *c* some conservative Republicans are Communists, *d* some Communists are advocates of heavy taxes, *e* none of these conclusions follows.)

Decisions reached through discussion in four- to six-man groups were correct on significantly more syllogisms than were the decisions of comparable nominal groups (the individual judgments being assembled by majority vote). More important (and consistent with the pooling model), 27 of the 29 groups outscored the member identified on a pretest as being best at the task. Barnlund suggests that there were differences in viewpoints among the members, reflecting their different attitudes and prejudices toward the groups involved in the logical problems. (Other issues involved atheists, college professors, and similar deviant groups.) These differences resulted in the development of a competitive orientation toward detecting each other's errors. At the same time, however, Barnlund observed that these differences of opinion sometimes operated to hinder selection of the correct conclusion. When disputes became intense, either the less aggressive (and not necessarily the less correct) gave in or the conflicting parties compromised on a third alternative

(almost always wrong) in order to protect feelings. "Apparently, disagreement stimulates thought up to a point; beyond that point, groups may lack the patience and skill to exploit it" (p. 59).

In the foregoing discussion, we have seen how group members can generate a set of satisfactory responses (for a conjunctive task) even when none of the individual members can do so. They manage this by putting together information that is not uniformly held among the members, or by combining part-solution responses so as to satisfy the task requirements. Is there any evidence that group discussion makes possible anything more than this simple pooling of responses of which individuals would normally (though not uniformly) be capable? Does the information-distribution process enable them to generate new responses, not available in their individual repertoires? The evidence on this point is ambiguous; there are few relevant studies and their results are somewhat inconsistent. Negative evidence is provided by Perlmutter (1953), who found very few instances where an item appeared in the group's memory protocol that had not appeared in one of the individual stories. This is what might be expected from Zajonc's social-facilitation hypothesis: the best-learned items (which would presumably appear on individual lists) would be facilitated by the social situation at the expense of the less well-learned responses (which would be more novel). On the other hand, Lorge *et al* (1953) observed that group discussions produced ideas that none of the group members had mentioned in their earlier individual protocols. One-third of the ideas contained in the group products were original in this sense. Of course, any such finding must be interpreted in terms of the complexity of the task in relation to the amount of time allowed for individual work. In this case, subjects apparently had 50 minutes to develop recommendations for complex morale and community-relations problems.

Indirect evidence that group processes stimulate individuals to unique and better performance might also be found in the studies of the transfer of training from group discussion to subsequent individual work. If the group participant is merely responding pretty much as he would alone, we should expect his subsequent performance to be at about the same level as that of matched persons who had been working alone all the time. On the other hand, if he had been stimulated to different and better activity, he might be expected to be superior to the solitary workers in his subsequent performance.

Neither Hudgins (1960) nor Banghart and Spraker (1963) find evidence that group work on mathematics problems has any more effect than individual study upon subsequent performance (upon further mathematics problems and a creativity test, respectively). If members are stimulated to better performance, they do not learn and transfer it. Gurnee (1937b) studied individual maze performance on the seventh trial following six learning trials conducted with groups. Erstwhile group members made nearly as many errors on the seventh trial as did subjects who had worked alone all the time, despite the fact that groups had performed better than individuals during the first six trials. Apparently the pooling effect underlying group superiority did not provide information which hastened individual learning.

Taylor and Faust (1952) obtained similar results with the game of twenty questions. Individual performance on the fifth day of practice was no different for subjects who had previously worked either alone or in groups.

In contrast, Perlmutter and de Montmollin found that group learning of a list of nonsense words facilitated subsequent individual learning of a different list.

The appropriate interpretation is not clear, but one can imagine that the example of other members, especially those most skilled at memory tasks, enabled individuals to acquire learning techniques useful on later occasions. Technique learning is probably also involved in positive transfer effects reported by Dunnette, Campbell, and Jaastad (1963). They found greater individual productivity in brainstorming (for example, the number and quality of ideas on the topic: "the benefits and difficulties that would be entailed if man develops an extra thumb") after a group session than after an individual one.

It must be clear to the reader that existing evidence on the question of novelty and unique performance in group sessions is far from satisfactory. There is no support for the notion in either direct analysis of group process or in transfer of training studies. Perhaps groups members learn problem-solving techniques from one another, but as yet there is no evidence that members' contributions to the group solution are modified in the direction of higher quality or greater uniqueness. The superior group performance noted in comparisons of groups and individuals seems to reflect the pooling of behaviors that are little different (or perhaps are even inferior) to those manifested by solitary workers. The most plausible hypothesis is that these beneficial effects occur only for problems of multiple parts and for group members having noncorrelated (complementary) deficiencies and talents.

Group performance below the level of the most proficient member

Faucheux and Moscovici (1958) reported results from one task which are consistent with those in the preceding section, but on a second task their groups performed at a level that was below that of the best members (though the authors do not present exactly this comparison). The first task, Riguet's trees, requires discovering as many as possible of the topologically different "trees" that can be constructed with seven "branches." This task permits "dispersion" of the group, with the members pursuing different methods in order to invent different trees. The multiple-part nature of the task would lead us to expect superior group performance, and the results bear out this expectation. Four-person groups, pupils at technical high schools, were superior to comparable individuals in the number of different trees they discovered, and the groups discovered as many trees as did nominal groups of four individuals who were given credit for each different tree that any of the four had identified. Consistent with other evidence that group members identify and eliminate one another's errors was the additional finding that groups had fewer duplications of the same tree than did individuals. The group members were apparently likely to see that a tree some person thought to be a new one was in fact topologically equivalent to one they had already discovered.

More important for our present concerns is poor group performance on the second task, Euler's figures. Groups were no better than the average individual and fell short of nominal-group scores. According to the authors, this task requires starting at any of several points in the figure and following a consistent strategy of solution. If the group members do not follow a common strategy, they create "noise" for one another. [Therefore, as Faucheux and Moscovici show elsewhere (1960), centrally organized groups, with easily distinguishable leaders, perform more proficiently than groups not so organized.] Solution requires thinking through a series of interrelated steps or stages, applying a number of rules at each point, and always

keeping in mind conclusions reached at earlier points. The verbalizations of several members who have started at different points and are pursuing different lines of reasoning are mutually disruptive. The result is that, despite its superior manpower, the four-person group does no better than the typical individual.

Davis and Restle (1963) found that the performance of their four-man groups fell short of the level predicted by the Lorge and Solomon "best man" model (Model A). This was particularly true for two problems that were rather long and required working through a sequence of ideas in order to arrive at the correct answer. In contrast to the type of problem referred to in the last section as multiple-part problems, these might more appropriately be described as multiple-stage problems. They are not susceptible to division of labor, but require the individual problem solver to place in proper relation a number of ideas and pieces of information before he can see the answer. This also means that demonstration of the correctness of a given answer is not a simple matter.

The implication of the Davis and Restle result is that, on problems of this type, the group processes handicap the most proficient member. To what degree this reflects interference with his own thought processes, and to what degree it reflects difficulty in gaining acceptance of the answer, once obtained, is not clear. This ambiguity exists even though Davis and Restle provide a good but too rare example of the value of supplementing gross performance and success data with questionnaire and process information. These supplementary data indicate that their *ad hoc* groups do not make much progress over the several problems in identifying the more talented members. They also suggest that all members tend to contribute to the discussion whether their comments are helpful or not. Unfortunately, these trends are consistent with both interference effects and resistance to acceptance.

Similar results emerge from the Lorge and Solomon research (1959) on the Targlia problem (three jealous husbands, their wives, a boat with capacity of three, and a river to be crossed). Consistent with the multiple-stage nature of this task, groups succeed less often than would be expected from the likely distribution of solvers among the groups. Once again, the difficulty of demonstrating the solution seemed to prevent the most proficient members from making their due contributions.

Difficulty of problem

In earlier sections we saw that with some problems groups do as well as their best members, and with other problems, through pooling of resources, they do better. Two recent experiments suggest that if type of problem is held constant, group performance may reflect either a "best man" effect or a "pooling" effect, depending on the difficulty of the problem in relation to the abilities of the members. The first experiment (Goldman, 1965) compared individuals and dyads in their performance on the Wonderlic Intelligence Test, an adaptation for industrial uses of the Otis Self-Administered Tests of Mental Ability. Subjects were sorted into high (*H*), medium (*M*), and low (*L*), samples on the basis of a pretest with one form of the Wonderlic. Then, individuals of the three types and pairs composed of all combinations of the three types (*HH*, *HM*, *HL*, *MM*, *ML*, and *LL*) were given a second form of the test. The pair members discussed each item and reached a mutual solution. The pattern of results suggests that pairs profit from a pooling effect at the low ability level, but only do as well as their best members at the higher levels. Thus,

LL pairs perform better than *L* individuals, but *MM* and *ML* pairs are at the same level as *M* individuals and *HH*, *HM*, and *HL* pairs are at the same level as *H* individuals.

Laughlin and Johnson (1966) believe that Goldman's results reflect the fact that the Wonderlic test was too easy for his college students. They repeated the experiment with the Terman Concept Mastery Test, a verbal test designed to discriminate among higher ability levels. Their results are almost exactly the opposite of Goldman's. The pairs profit from a pooling effect at the high ability level but not at the lower ones. The *HH* and *HM* pairs are higher than *H* individuals, but the scores for the other conditions tend to be at the levels of their best men (*HL* equals *H*, *MM* and *ML* equal *M*, and *LL* equals *L*).

It appears that, with an easy set of problems, the more capable individuals can master most of the items alone and can contribute little to one another in group discussion. With more difficult items, each capable person is likely to be able to solve some but not other items; thus, a pair of such persons can gain from pooling their complementary resources. The situation is reversed for persons of low abilities. With difficult items, they do very poorly alone and can contribute little to each other (or to a person from any other ability level) in the course of joint problem solving. With easier items, each person is able to master certain ones alone and pairs will show a pooling effect. In sum, the pooling effect seems to require that group members confront tasks of *moderate* difficulty to them, neither too easy nor too difficult.

GROUP PROBLEM DISCUSSION GENERATES PRESSURES TOWARD UNIFORMITY

This generalization is hardly newsworthy. We wish here merely to indicate the evidence of such pressures within the context of group problem-solving sessions. It is perhaps not entirely obvious, prior to examining the evidence, that social processes entailed in rational problem solving, in presumably cooperative relationships, will reflect uniformity pressures.

Thorndike (1938a) investigated rather thoroughly the interplay between correctness and majority support for an answer. The tasks and procedure have already been described. The group discussants were under instruction to arrive at correct unanimous decisions. Perhaps because of this totally conjunctive task requirement expressed by the experimenter, there were very strong tendencies for subjects to shift toward majority positions. However, this effect was not such as to override completely the "pull" of the correct answer. The group decision moved toward an initial majority more often if it happened to correspond to the correct answer than if it was wrong (79 percent as compared with 55 percent, respectively). Thorndike presents highly regular trends descriptive of the relations between size of initial majority, on the one hand, and on the other, (1) the likelihood that a majority member would leave the majority (which decreases with increase in size of majority) and (2) the likelihood that a minority member would join the majority (which increases with size of majority). Interestingly, Thorndike notes that the existence of shared misapprehensions occasionally resulted in the group decision containing more error than the original distribution of individual votes.

Thomas and Fink (1961) report a considerable degree of pressure toward uniformity even though members of the two- to five-man groups were under no external pressure to reach unanimity. The groups had merely to write a final report indicating each person's answer. Only six of the 44 groups were in unanimous

agreement in their prediscussion answers, whereas 28 were so in their first discussion answers. Yet this convergence was not necessarily in the direction of the correct answer. Thomas and Fink provide another admirable instance of the acquisition of supplementary data that are useful for interpretive purposes. There existed the expected confidence differential between holders of the correct and incorrect answers, but the general level of confidence seemed high enough to sustain vocal support for the total range of possibilities, and evidence about the discussion process was consistent with this supposition. It appeared that the correct answer, held initially by only one group member, was likely to gain adoption only if he were a person of high talkativeness. These conditions leave much room for the operation of conformity pressures, and subjects indeed reported that they felt considerable pressure of this sort. In general, this experiment illustrates a case where verifiability of the correct answer is low (although the authors expected it to be high) and where other answers compete successfully with it for capture of the plurality or majority vote. The achievement of unanimity, whether on the correct or incorrect answer, was apparently made possible by the actions of a highly vocal person. With the uniformity evidence in hand, the investigators were led to formulate a consensus model to replace the rational model (the familiar Model A) they had anticipated would be appropriate.

Brainstorming

This discussion procedure, developed by Osborn (1957), can be seen as an attempt to circumvent uniformity pressures in group problem solving and their attendant dangers. The general aim of brainstorming is to elicit a very wide range of ideas. The main procedural rule is that criticism and evaluation of ideas (both one's own and those of others) are to be withheld. "Freewheeling" and "taking off" from others' ideas are encouraged. In the present context, one might suggest that the purposes of these rules are to reduce the convergent application of outcome control (by eliminating deviation-detering criticism and negative sanctions) and to weaken the development of a stabilizing consensus (by eliminating open agreement and support and by encouraging innovation).

The experiences of Osborn and others with the method have led them to conclude that persons can generate many more creative ideas when working together under brainstorming rules than when working alone. However, the experiments by Taylor, Berry, and Block (1958) and Dunnette, Campbell, and Jaastad (1963) yield evidence to the contrary. The rules do not seem adequate in these experiments to eliminate the operation of uniformity pressures. Both experimental reports note that brainstorming groups (as compared with individuals operating under similar instructions) tend to pursue rigidly a single line of thought for an unduly long time. They also indicate that the moratorium on criticism does not seem to be sufficiently disinhibiting for some of the discussants.

Yet these negative results may not tell the whole story. Meadow, Parnes, and Reese (1959) found that brainstorming instructions yielded more good ideas in *individual* problem solving (finding alternative uses for a hanger or a broom) than did nonbrainstorming instructions. The latter emphasized quality and stated that the problem solvers would be penalized for the poor ideas that appeared on their final lists. Several reservations must be entered regarding the interpretation of this result. (1) It is found for individual work; the inhibition of evaluation may be far

more difficult to achieve in group settings. (2) It occurred only for the first problem that subjects happened to work on, whether the hanger or broom problem, and not for the second; the brainstorming set may wear off or its adoption may be difficult after having been sensitized to evaluation. (3) The obtained difference may reflect an overemphasis on critical evaluation under the nonbrainstorming procedure rather than an advantage of the brainstorming method over ordinary group discussion. (4) The subjects had nearly completed a course in creative problem solving; such training may provide a kind of indoctrination which biases the results, or it may provide the practice necessary for adherence to the brainstorming rules.

With regard to the last point, a strong argument can be made that prior training and special practice are a prerequisite for successful use of the brainstorming approach, especially in view of the high likelihood that problem solvers will find the procedure to be rather unusual. This is one implication of a study by Cohen, Whitmyre, and Funk (1960), who found that certain types of brainstorming groups (pairs) produced more unique ideas than did comparable "nominal" groups. Pairs with prior training in creative thinking and cohesive pairs, whose members preferred each other as partners for brainstorming, were more effective than pairs without these attributes or than nominal pairs. This is consistent with our earlier suggestion (Thibaut and Kelley, 1959) that the success of brainstorming is likely to depend greatly on the relations among the members, the type of leadership, and such factors. The study by Cohen, Whitmyre, and Funk suggests that research on this procedure should move beyond the group-individual comparison to the consideration of different kinds of groups. (The same can be said, unfortunately, for all the research in the group-versus-individual field.)

GROUPS ARE SLOW

In numerous experiments in which groups and individuals are given a standard test to perform, groups require more time. For example, this has been found with a recall task (Perlmutter, 1953), an arithmetic reasoning test (Klugman, 1944), maze learning (more time per trial in Gurnee, 1937b, but fewer trials to reach criterion in Beasley, 1958), puzzles (Marquart, 1955), and a complex planning problem (Fox and Lorge, 1962). Evidence of group slowness also comes from studies of the amount accomplished within given time limits. For example, as noted above, less productivity in brainstorming for a given period of time has been reported by Taylor, Berry, and Block (1958) and Dunnette, Campbell, and Jaastad (1963) (but not by Cohen and his colleagues, 1960).

Even when groups are found to accomplish more in the allotted time, they may prove to be inefficient in terms of man/hour ratios of productivity. In few of the experiments where it makes sense to calculate productivity per man-hour is it found that groups are more efficient than individuals. In this connection it should be noted that man-hour calculations may be quite misleading unless the task output consists of items of fairly uniform value or significance. For example, Barnlund's four- to six-person groups were correct on an average of 21.9 of the syllogisms given them, whereas the average and best individuals in these groups were correct on an average of 17.5 and 18.5 items, respectively. An unsophisticated man-hour analysis, which failed to take account of the quality or significance of the various items, would suggest that groups generate only four or five correct solutions per man-hour as compared

with a rate of 17 or 18 for individuals. However, this would overlook the possible difficulty of the three extra items that groups managed to solve. In a practical decision situation, the small extra bit of accuracy (in this case, reflecting resistance to prejudiced judgments) might well be worth the investment of the necessary extra man-hours.

In some instances the extra time groups require to reach solution reflects time needed to resolve initial differences of opinion among the members. An early study by South (1927) suggests that this depends on the type of task. He formed 1312 college students into groups of three and six. Each group worked at four different types of problem, two of which South classified as "abstract" (bridge problems and a multiple-choice task adapted from Yerkes), the remaining two being classified as "concrete" (judging emotions from photographs and rating English compositions). South's data suggest that group size made no dependable difference in accuracy on either of the two types of task. However, the smaller groups tended to be faster than the larger ones on the "concrete" problems and slower on the "abstract" ones. South's interpretation of this speed reversal is that on the concrete problems every member had a strong opinion and consensus was gained only after much threshing out of differences. Presumably, the fewer the members, the less time this process required. This is consistent with the results of Hare (1952), who found that in discussing the relative importance of various pieces of equipment for a camping trip, small groups of Boy Scouts were better able to achieve consensus than were large ones. On tasks of this sort, expertness is not easily demonstrable. Without any empirical or formal means of verifying a proposed solution, group consensus might prove the only means for producing widespread stabilization of attributions. But reaching a consensus may be quite time-consuming, particularly when the group is large enough that it contains some group members with strong but conflicting opinions on the matter. Through their disagreement, such persons will prevent the other members from attaining stable attributions about the problem and, in this manner, will indirectly (and through their objections, directly) inhibit the development of a consensus around any given response.

"Slow but sure"

Groups seem often to justify this description, which simply represents the juxtaposition of the (sometimes) superior accuracy noted earlier and the slowness noted above. Davis and Restle (1963) found this to be true of their four-man groups in solving word-tangle and measurement problems: the first group solution had a better chance of being correct than the first individual solution, although the latter came sooner on the average. Similarly, with their version of "twenty questions," Taylor and Faust (1952) found that groups required more man-minutes to achieve solution but, apparently employing their questions more wisely, were more certain to attain the answer before the thirty-question limit was reached.

GROUPS ARE UNCOORDINATED

Interpersonal processes are undoubtedly less well performed and organized than the corresponding intrapersonal processes. It is not surprising, then, that on tasks requiring coordination of efforts, groups are inferior to individuals.

This is the explanation offered for group inefficiency in weight-pulling, a task that requires coordination at a given time of different persons' efforts. Studies of

the pulling power of groups (reported in Dashiell, 1935) indicate that, at least up to sizes of eight or ten, the power per person decreases as group size increases. Two men exert slightly less than twice the force exerted by an individual alone, three men exert considerably less than thrice the same force, and so on. The eight-man group pulled 249 kilos where eight times the average individual's pull would have amounted to 504 kilos!

Difficulties in coordinating responses in their distribution over time are suggested by Comrey and by McCurdy and Lambert. The first series of studies (Comrey, 1953; Comrey and Deskin, 1954a, 1954b) provides a comparison of pairs and individuals on a manual-dexterity task, the Purdue pegboard test, which requires assembly of simple parts. As an individual task, a person can obtain maximum speed by achieving coordination between his own two hands (place peg in hole with left, washer on peg with right, collar over washer with left, and another washer over collar with right). This coordination obviously involves activities and organization of behavior with which the individual has had much practice. As a pair task, it involves a distribution between the two persons of the four responses required in the assembly. Subjects are required to alternate the four responses between them. When the tasks were made otherwise comparable (in the two Comrey and Deskin experiments), the pairs completed more assemblies per minute than did even their most proficient members, but they fell far short of completing twice as many as the average individual. In keeping with the commonsense notion that in a highly coordinated procedure of this sort, pair performance would be governed by the poorer of the two members, in all three experiments the individual performance of the lower man in the pair predicted somewhat better to the group performance (via multiple regression analysis) than did that of the higher man. [In contrast, on tasks requiring less coordination, jigsaw assembly and crossword puzzles, the higher man's performance tends to be the better predictor (Comrey and Staats, 1955; Wiest, Porter, and Ghiselli, 1961).]

McCurdy and Lambert (1952) provide another instance of group difficulties when response coordination over time is required. Here again, it seems that the performance reflects the capabilities of the least proficient member of the trio.

The Wegner and Zeaman (1956) comparison of teams and individual performance on the rotary pursuit provides an apparent exception to our generalization about group incoordination. Yet this appears to be a case where the group's coordination problems are minimal because of the physical characteristics of the apparatus. The physical linkage between the two (or four) team members as they guide the stylus in pursuit of the target enables them physically to enforce a certain amount of coordination upon one another, and places limits upon the degree to which they can get out of synchrony. The superiority of groups (almost from the outset) and the ease with which transfer is made from individual to group activity suggests that there is no problem of the group's having to become organized.

Lest the reader conclude that incoordination is a problem that groups encounter only on motor tasks, it may be useful to summarize Thorndike's (1938b) observations of group performance on a complex construction task: designing a crossword puzzle. With other tasks, Thorndike found evidence that groups do especially well when the solution of the problem permits many alternative solutions rather than only a limited number. However, in the construction of a crossword puzzle, even though there exists an innumerable set of alternative solutions, groups did very poorly. It is not difficult to imagine the coordination difficulties that arise when several people attempt simultaneously to work on this task. In Thorndike's words, "there is no predetermined

right answer There is no gradual confirmation of the correctness of the answer . . . and the interrelations of many parts must be kept continuously in mind. Individual suggestions follow diverging lines Groups found it very difficult to work together on this complex fluctuating pattern . . ." (pp. 412-413). This, of course is sharply different from the task of solving an already constructed crossword puzzle. The framework of the latter provides and, indeed, imposes a coordination among the members in their responses.

GROUPS REQUIRE ORGANIZATION AND TIME TO DEVELOP IT

Investigations by Anderson (1961) and by Fox and Lorge (1962) both assume the need for the development of organization if a group is to achieve maximum proficiency, and both raise the question of the time required for such development. Anderson's results show that real groups lag behind nominal-group performance (on his anagram-like task) for the first three minutes but excel thereafter over the 15-minute period. Anderson points out that if, as he believes, group members require time to learn to work together, the time limits the experimenter happens to choose for his task may determine the outcome of the group-versus-individual comparison. In a similar vein, Fox and Lorge found that groups were inferior to individuals with a short time period (50 minutes to prepare a plan for improving morale and efficiency of men at an isolated weather station) but were equal to them with a longer period (100 minutes).

These two experiments may well illustrate somewhat different effects of time on process. Anderson's task requires minimal coordination among the members but may be susceptible to social-interference effects. As mentioned earlier, several studies suggest that these effects probably dissipate as the person becomes adapted to the social setting. This effect of time is quite different from the one we wish to emphasize here, namely, the necessity of time in the development of organization. The latter seems more descriptive of what happens as Fox and Lorge's six-man groups assemble, synthesize, and record the ideas needed to solve their complex task. These investigators also find that pretraining in group problem solving (with emphasis on group dynamics and organization) enabled the groups to excel individuals regardless of the time limit.

Another study from Lorge's series on group problem solving (Lorge *et al.*, 1953) presents evidence having similar implications. At the beginning of a training course in staff procedures, small groups were found to lose a large proportion of the ideas their constituent members had for solving some problems. After the training, the group decisions were found to be greatly improved, even though the individual performances of the same personnel were no better. The indicated conclusion is that the groups developed an organization that enabled them to retain and use a larger percentage of the ideas possessed by their members.

The point of these various observations is that groups are sometimes handicapped, in comparison with individuals, by their initial lack of organization. If they are studied over a longer time period (and, hence, given the time to organize), or if allowed to attain organization by other means, they will often make a better showing. This point also argues for the desirability of studying existing groups, with relevant prior experience, in addition to the *ad hoc* groups generally employed. Given any of these methodological modifications, further group research may well necessitate sharp

qualification of the preceding generalizations, particularly those relating to slowness and incoordination.

The requirement of organization is not to be belabored, but it may be useful to suggest some ways in which this need may be manifested in group studies. One clue would be great time-to-time variability of performance. As an individual is learning a complex task, his behavior is initially highly unstable. Sometimes he happens to make the appropriate responses and to coordinate them smoothly, but at other times he makes a series of mistakes or a crucial one, and completely "blows" the performance. Later, as the components become well learned and their coordination mastered, his performance becomes stable (and, of course, improves). Similarly, we would expect highly variable group behavior to be symptomatic of the initial stages of organizational development. Thus, Comrey (1953) finds group scores on the pegboard assembly task to be less reliable than individual scores, consistent with the assumption that the groups suffer more from lack of organization. In contrast, Comrey and Staats (1955) find group scores to be more reliable on crossword puzzles which appear to require less coordination. Yet, inadequate organization may not be the only factor underlying variability in group performance. Group performance in the rotary pursuit task, described by Wegner and Zeaman, though appearing by other criteria to require little development of organization, yielded greater trial-to-trial variability than did individual performance.

A second indication of need for organization would be that group performance bears a closer relation to the performance of poorer members than to that of the more able ones. Some evidence bearing on this has been indicated above. The reasoning would be that, prior to organization, breakdowns and incoordination would generally be caused by aberrations and errors in behavior of the least capable.

A third indication of organizational deficiency would be lack of transfer from individual training to group performance. An example of such transfer effects is presented by Perlmutter and de Montmollin (1952). Individual experience in learning the word lists did not affect subsequent group performance, which may mean that in developing an effectively functioning group, difficulties were encountered which were of sufficient magnitude to mask any gains resulting from individual practice effects. If improved group performance entails primarily the development of working relations among a specific set of individuals, prior individual practice should be of little benefit. Similarly, such group learning should have little transfer value for subsequent individual performance. A possible instance of the latter has been noted in connection with Lorge's study of the effect of training in group procedures (Lorge *et al.*, 1953).

Another example of group learning that is of little value for individual performance is provided by Pryer and Bass (1959). They required five-woman groups to rank sets of five U.S. cities as to size. Each successive problem involved a set of completely different cities. Subjects made the rankings first as individuals and then with discussion and group decision. Half the groups were given feedback as to the correct ranking after each problem. This feedback led to an improvement in group scores but not in individual ones. The reason for the latter result is clear: since the feedback concerned cities that never occurred on subsequent problems, the individuals gained no information of value to them. The basis for the group gains is less clear, but one plausible possibility is that the feedback enabled group members to identify which of their colleagues were best informed on this type of problem. Ac-

according to this view, feedback permitted the development of an information-distribution process (one aspect of group organization) which, though it aided group performance, provided no assistance to individuals in making their prediscussion judgments.

GROUPS CAN BE RISKY

It has been known for some time that group decisions or judgments do not always reflect a simple pooling or averaging of the prior individual judgments. Differences in status, role, centrality in the communication net, demonstrable competence, confidence, and assertiveness produce differences in the weights given to the various members' contributions. Still, the recent research of Wallach, Kogan, and colleagues has developed certain novel results and has created some difficulties of interpretation.

This line of research derives from an M.A. thesis of Stoner (reported in Brown, 1965) done under the direction of Marquis and Wallach. Stoner asked male graduate students of industrial management, assembled in small groups, to make private decisions about the level of risk they would accept for each of 12 "life dilemma" problems (Kogan and Wallach, 1964). Since these problems have been widely used in the research to be reported in this section, it may be advisable to outline their main characteristics. Each of the 12 problems portrays a situation in which the central character confronts a choice between two alternative actions whose outcomes differ in their attractiveness and their probability of occurrence. The subject is instructed to assume the role of adviser to the central person in the story, and to indicate the minimum probability of success he would require before recommending the alternative that might have the more favorable outcome. The following is an example of the first problem:

Mr. A, an electrical engineer who is married and has one child, has been working for a large electronics corporation since graduation from college five years ago. He is assured of a lifetime job with a modest, though adequate, salary and liberal pension benefits upon retirement. On the other hand, it is very unlikely that his salary will increase much before he retires. While attending a convention, Mr. A is offered a job with a small, newly founded company with a highly uncertain future. The new job would pay more to start and would offer the possibility of a share in the ownership if the company survived the competition of the larger firms.

Imagine that you are advising Mr. A. Listed below are several probabilities or odds of the new company's proving financially sound. Please check the lowest probability that you would consider acceptable to make it worthwhile for Mr. A to take the new job. (Several alternatives are then outlined for the subject, for example, "the chances are 1 in 10 that the company will prove financially sound," "the chances are 2 in 10," etc.)

The remaining problems have to do with "dilemmas" of a chess player who has the chance of beating a champion, a college football captain considering a very risky play that may win the game, a college senior committed to graduate work in chemistry but unsure whether he should enter a distinguished university where few succeed.

After the individuals responded to the problems, the groups then discussed each one until consensus was reached. With remarkable regularity, the groups reached agreement on a level of risk substantially greater than that acceptable to the average

member before discussion. As in its subsequent replications, the effect is manifested both by a displacement of the modal judgment toward the risky end of the continuum and by a homogenization or reduction in variability around the new mode.

Wallach, Kogan, and Bem (1962) guessed that Stoner's finding might have depended on special properties of his subjects: norms of riskiness attaching to the industrial-management role might have become salient during the group discussion, or at the very least, norms specifying masculine requirements to be bold and daring might have become implicitly persuasive during the discussions. Hence, Wallach, Kogan, and Bem carried out an experiment very much like Stoner's but using liberal arts undergraduates as subjects, composed into small groups half all-male, half all-female. Their results show a highly significant shift toward risk in both the male and female groups. This shift was revealed in consensual decisions and was maintained in the postconsensual private judgments of the group members. The occurrence of the shift was therefore not dependent on any special characteristics of Stoner's subjects.

The phenomenon of the risky shift has now been successfully reproduced many times. It holds up under a variety of task conditions, for example (Wallach, Kogan, and Bem, 1964), when the risks entail possible monetary losses for failing old College Entrance Examination Board items (antonyms, spatial relations, etc.). It is even maintained when the possible negative consequences of risk taking are emphasized: in this experiment (Bem, Wallach, and Kogan, 1965), the shift was again found when the decisions involved risking painful side effects, as well as monetary losses, in volunteering to participate in experiments on "physiological effects on problem solving."

It is possible to invent situations in which the shift would not be expected to occur. If the value of the prize is equal to the value of the stake, only odds of 50-50 or better would even be entertained. As the value of the prize is progressively exceeded by that of the stake, acceptable odds are further and further restricted to the conservative end of the risk continuum. Hence, little room would exist for shifts in either direction. It is possible that the discovery of "life dilemma" problems which do not produce the risky shift (see Brown, 1965, pp. 703-706; Rabow *et al.*, 1966) is attributable to this severe restriction of alternatives to the extremely conservative end of the scale.

As the results come in from the many variations on this line of research, it becomes plain that the events critical in producing the risky shift are occurring during the process of group discussion. And it is the discussion itself, and not a requirement that the group reach consensus, that appears to be the condition for producing the shift (Wallach and Kogan, 1965). Furthermore, from a recent experiment (Kogan and Wallach, *in press*) in which the discussions were conducted over an intercom system, without visual contact, it appears that the necessary factor in the discussion is a vocal one. What gets vocalized, however, is a multiplicity of things and we will now attempt to isolate more closely what may be the crucial aspects.

A plausible interpretation of the role of discussion in producing the shift is one offered by Brown (1965). He suggests that, at least in America, there is a cultural value attached to moderate risk taking. One should be "venturesome" without being "foolhardy." But it is difficult in any concrete situation for individuals to know how to realize or "specify" (in Parsonian language) the precise level of risk that embodies

moderate risk taking. It is the function of group discussion to inform the members about the level of risk that constitutes moderate riskiness in a particular situation. "The content of the discussion, the arguments pro and con, are of no importance by this theory. It is the information about other people's answers that makes individuals move toward greater risk after group discussion" (p. 702).

Brown presents an additional, closely related, interpretation based on research from an M.A. thesis of Hinds (reported in Brown, 1965). Hinds asked subjects to estimate how others like themselves would respond to some of the "life dilemma" problems. They guessed consistently that others would select more conservative alternatives than they had themselves selected. This "pluralistic ignorance" represented by the conservative bias in perceiving group opinion is shattered as the group begins to discuss the issue. It is now borne in on the group member that he can indeed adopt alternatives riskier than his initial ones, which were calibrated to a too conservative view of other people's opinions. Again, in this interpretation, the presumed function of the group discussion is to provide information about the distribution of judgments in the group. It should be noted that Brown's interpretations involve some of the assumptions of the normative model of Thomas and Fink (1961).

These interpretations of Brown are quite plausible, and the mechanisms they describe may indeed account for risky shifts in certain special situations. As a general explanation of the phenomenon, however, they seem inadequate in view of recent findings by Wallach and Kogan (1965). In this experiment, after individual private judgments were made for the "life dilemma" problems, some of the groups were required to reach a consensus through successive rounds of balloting. A diagram of the seating plan with the subjects' names in their seat locations was drawn on a blackboard in full view of the group. No discussion was permitted, but on each round of balloting the experimenter recorded each member's vote next to his name and seat location. Each member was thus fully informed about the successive distributions of opinions in the group. The results of this experiment show no risky shift for either the male or female groups in this condition, though the shift was again replicated with full force in other groups in which discussion was permitted to occur. This result appears to raise insuperable difficulties for Brown's interpretations.

It should be noted, though, that the Wallach and Kogan instruction to their subjects in the balloting condition did not require them to vote for their initial private opinions. The instructions were as follows: "You are to make a recommendation that takes account both of what you believe the group *can* agree on and what you think the group *should* agree on" (p. 9). Such instructions might conceivably lead the subjects to vote for alternatives less risky than their own private ones. The previously cited evidence of Hinds might suggest that, perceiving others to be more conservative than themselves, subjects might have voted conservatively out of pragmatic interests in reaching a quick consensus. On the other hand, Wallach (personal communication) declares that the first-round balloting was *not* more conservative than the initial private opinions. This issue is not yet closed. In a recent experiment by Teger and Pruitt (1967), group members merely exchanged without discussion their private decisions about the "life dilemma" problems. Unlike the procedure in Wallach and Kogan (1965), consensus was not required. The results show a significant shift to risk. Though the risky shift was even larger, and significantly so, when Teger and Pruitt permitted other groups to discuss the problems, these results

suggest that at least part of the risky shift may be attributable to the processes of information exchange as hypothesized by Brown.

Let us turn now to another very plausible possibility in interpreting the risky shift, one that immediately leaps to the eye. It may simply be true that those who take initially risky stands are personally more influential in determining group opinion than those who take initially conservative stands. There are several bits of evidence that are consistent with this view. Brown (1965, p. 697) cites an M.A. thesis by Nordhøy, who performed a content analysis of the tape recordings from Stoner's original groups. He found that there were consistently more arguments advanced in favor of risk than of caution. Hence, there appear to be relatively stronger influence attempts to move the group toward the risky rather than the conservative end of the continuum. Wallach, Kogan, and Bem (1962) found low positive (but significant) correlations, for both male and female groups, between the riskiness of initial individual judgments and retrospective judgments by the subjects of the amount of influence exerted by the various group members. A similar result is reported by Wallach, Kogan, and Burt (1965) for relationships between initial riskiness and retrospective judgments of "forcefulness of arguments." Marquis (1962) also found this relationship to hold for his groups composed of middle-level managers attending an executive training program.

These data are open to more than one interpretation. Nordhøy's analysis simply indicates that the influence process is weighted in the direction of the shift. The correlations between initial riskiness and influence may simply reflect what has happened: subjects observe the shift to occur and infer from it that the initially risky persons must have been more influential. Another possible interpretation is that the initially risky persons are personally very persuasive and influential. As we saw in the earlier discussions of social influence, one may be influential by virtue of his expressed confidence, his sheer volubility, and his perceived expertness or history of success. (Such sources of personal influence as status or authority have been ruled out in the selection of subjects and role assignments in the present research.) Without specifying the basis of personal influence, the hypothesis might be advanced that initially risky persons are endowed with generalized properties of persuasiveness.

Rim (1963, 1964) is of the opinion that initially risky subjects are more influential, and he has identified some of their personality characteristics. He studied five person Israeli groups, heterogeneous by age, sex, and occupation, making judgments of six of the "life dilemma" problems. Rim obtained the risky shift and found that subjects scoring high in "extraversion" (Rim, 1964) and high on a measure of "need achievement" (Rim, 1963) were atypically risky in their initial judgments. Since the group decision shifted toward these subjects, Rim argues that they must have been influential, and he concludes that their extravertive personalities were the basis of their influence.

A more direct attempt to test the hypothesis that initially risky persons are characterized by high general persuasiveness has been made in a recently completed experiment by Wallach, Kogan, and Burt (Wallach, personal communication). Five-person groups were composed so that each member represented a different quintile of initial riskiness on the standard "life dilemma" problems. The groups so composed discussed a series of problems of two types. In one type of problem, the various

alternative "solutions" were arranged on dimensions to which riskiness was irrelevant. In other problems, the alternatives were balanced so that they did not differ in riskiness. Correlations were computed between initial riskiness and retrospective ratings of influence exerted, guidance given, and contributions made during the discussions. For the female groups, marginally significant positive correlations (about 0.2) were obtained; hence, it appears that for these groups a part, at least, of the risky shift may be attributable to the persuasive abilities of initially risky members. For male groups, the correlations were slightly negative (though not significantly so), thus disconfirming the hypothesis that initially risky (male) members are usually and generally persuasive.

However, as Brown (1965, p. 687) notes, it is possible that, even though initially risky persons are not *personally* and *generally* influential, some properties associated with their risky positions may be particularly influential. If this were so, it could explain both (1) the positive correlations between initial riskiness and rated influence in discussions of the "life dilemma" problems and (2) the risky shift itself. There are two related aspects of the risky position that may give the proponent of such a position a disproportionate weight in open discussion. One advantage this position may have over the conservative one is simply in the language available to the proponent of risk. In Western culture at least, the "rhetoric of risk" (to use Brown's phrase) is likely to be more dramatic and far richer in connotations of myth and poetry than is the "rhetoric of caution." In debate, then, though not in the mere transmission of information by public balloting, the occupant of the risky position, regardless of the personality or situational factors that led him to espouse that position, would hold the advantage. Moreover, and secondly, the conflicts and uncertainties entailed in accepting the riskier alternatives might lead the proponent of such alternatives to state his arguments with a heightened intensity and amplitude (*cf* Nordhøy above). In short, he may have the advantage of a more potent language, more intensively produced.

The interpretation offered above appears to account for the facts published to date. It may be especially favored by Rettig's (1966) recent finding that group discussion, leading to the risky shift, appears uniquely to involve a heightening of the "reinforcement value" of the gains accruing to riskiness. If it is correct to understand Rettig's results as indicating that during the group discussion the value of the prize and the resultant worth of the risky endeavor are increased, then any interpretation is strengthened that, within the constraints imposed by the prior discussion, proposes a mechanism (like the rhetorical advantage) capable of enhancing the group's valuation of the prize. The research of Lonergan and McClintock (1961) may also be viewed as indirectly supportive of the rhetorical interpretation. These investigators studied the betting behavior of female undergraduates, comparing the riskiness of their bets when made individually and when, taking turns at betting, the gains and losses from each bet were paid to or taken from every member of the group. In the latter condition, though group discussion occurred, the information relevant to decision making was so sparse and (compared with the "life dilemma" problems) the situation was so simple, that it is unlikely that the discussions could have produced much rhetoric. Hence, the rhetorical interpretation would predict little or no risky shift. (The Bateson interpretation, to be discussed later, would make a similar prediction.) The group (common fate) condition did in fact show only a very small and nonsignificant risky shift.

The rhetorical interpretation has not been directly tested. Even if it satisfied the direct tests, it may require supplementation to account fully for the risky shift. The possible limits of the interpretation are suggested by yet another study recently completed by Kogan and Wallach (Wallach, personal communication). Groups of subjects made initial private decisions about the "life dilemma" problems. Then, instead of discussing the problems themselves, they heard tape recordings of another group's discussion, and afterwards recorded again their private judgments. The results apparently show that these auditor groups do indeed shift significantly toward risk, as the foregoing interpretation would predict, but they do not shift as far as do the groups that have actually conducted the discussions. Personal participation in the discussion contributes some additional component to the shift.

It is possible that an additional mechanism necessary to produce the risky shift in its full amplitude is the one emphasized by Wallach and Kogan from the very beginning of their research. This is a process by which the responsibility for risky decisions comes to be shared by all the group members in the course of their discussions. Though this concept of "diffusion of responsibility" is a somewhat elusive one, its essential meaning may perhaps be fairly restated as implying that persons are more highly motivated to avoid the blame for causing the loss of the stake than to aspire for the credit for winning the prize. During the discussion, the group members come to feel, according to this view, that they share the responsibility for any negative consequences of their risk taking and that causality for disaster will not be imputed to any single member. The deindividuated member (Festinger, Pepitone, and Newcomb, 1952) acquires safety in his anonymity.

In speculating about the dynamics of the processes creating the risky shift, it seems plausible to guess that both a "diffusion of responsibility" as well as a "rhetorical advantage" may be in operation during the group discussion. The function of the former is to reduce the avoidance of risk, and that of the latter to heighten the approach to it.

In reviewing other studies on comparisons between groups and individuals, we paused from time to time to lament the absence of control conditions in which individuals were afforded as much time for reflection and further study of the problem as occurred perforce for groups involved in discussion of the problems at issue. The lively possibility in all these studies is that the individual's private review of the facts and internal dialogue with himself about their best interpretation may often lead to results similar to those of group discussion. Bateson (1966) has tested this possibility in a recent experiment. He found his English undergraduate subjects to exhibit as much increased riskiness when they were caused individually to study five of the "choice dilemma" problems further as did small groups in discussion of them. Control subjects given irrelevant materials to study between the prestudy and poststudy measures showed no shift at all. The experimental materials and procedures in Bateson's research departed in numerous small ways from those of Wallach, Kogan, and their colleagues. Furthermore, the shift toward risk taken both by individuals privately rehearsing their views and by groups discussing the issues were only about half as large as those obtained by Wallach and Kogan. Hence, as Bateson admits, the effect he has observed may account for only a portion of the full risky shift. The Bateson effect does not, of course, mean that group discussion is unimportant in producing the shift. It may, in fact, be the most reliable technique for producing sustained reflection on the problems. It should be noted, though, that to the extent

that Bateson's findings account for the shift they are inimical to the responsibility-diffusion hypothesis (or any hypothesis requiring information exchange), while they are not inconsistent with a hypothesis based on a rhetorical advantage for the risky position in an *internal* dialogue.

MEMBER MOTIVATION IS HIGHLY SENSITIVE TO GROUP CONDITIONS

Here we examine research that compares group and individual conditions in terms of the effect of groups on the motivation of their members. A classic comparison has been that of group versus individual decision making (Bennett, 1955; Coch and French, 1948; French, Israel, and As, 1960; Levine and Butler, 1952; Lewin, 1947; Willerman, 1943). These studies have investigated the relative effectiveness of these two types of methods in inducing the persons involved to adopt a work or performance goal or to make a change in their behavior. The group method typically has entailed a discussion of the advantages and disadvantages of the requested (or suggested) change, and ultimately the participation in a group decision about whether (and how) to make the change. The individual procedure requires each person to make the decision more or less independently (though often as one of an audience to which the request is addressed). In general, these experiments have shown that greater change is accomplished by the group method. At least in part, this effectiveness seems to reflect a modification of the members' motivations; prior individual preferences and interests are often set aside in favor of carrying out the group decision.

Whereas the studies just mentioned deal largely with change in individual behavior, some experiments by Bass and Leavitt (1963) extend the findings in an important way. They indicate the value of member participation and decision in the *organization* of the group's activities. In three experiments, performance was superior and attitudes more favorable when subjects followed plans they had developed for themselves. The tasks were such that the plans dealt mainly with assembling information from the three members of each group. The design used in these experiments more or less ensured that the plans developed by outsiders and imposed on the work groups were as feasible and well conceived as those developed by the groups themselves. Bass and Leavitt speculate that the plans from the outside were less well understood (something was lost in the communication from planners to executors) and were met with some resistance on the part of the executors. It is also possible that the plans designed by others may be subject to devaluation much as outgroup products are devaluated in relation to own-group products, even under noncompetitive conditions (Ferguson and Kelley, 1964).

The group-decision studies deal with the question of the circumstances surrounding the initiation of a task. Other group-versus-individual studies bypass this problem (all subjects are assigned certain tasks) and examine the effect on effort and orientation of the person's being a group member as opposed to working for himself. Among several experimental conditions in the Thomas (1957) experiment was one in which subjects worked exclusively for their own interests and independently of others (though in the same room), and another in which they worked together (in four-woman groups) for a joint goal in which they all had a stake. Subjects in the latter condition performed the (cardboard-house building) task more rapidly. This may reflect an advantage of division of labor, but the highly interdependent subjects also

expressed a greater sense of responsibility for one another and were more willing to help each other.

If one might be tempted to conclude that group membership always elicits altruistic striving, a study by Zander and Medow (1963) serves as a provocative counterexample. It concerns reactions of teams versus individuals under conditions of failure. The task required propelling a ball along a path so that it would stop as close to a target line as possible, neither under- nor over-shooting. The shuffleboard-like equipment permitted any number of persons up to six to work together in pushing the pole with which the ball was propelled. In a failure condition, the high school subjects, either individuals or four- and five-boy teams, were told they were scoring consistently lower than other persons at their school. Whereas individuals performed better under failure feedback (as compared with success), teams did not do so. A number of other types of evidence indicated that the members of teams essentially gave up under the failure conditions (they devaluated the importance of the task), denied their own personal responsibility for the poor performance (they rated down the team but not their own performance, whereas individuals under failure rated down their own performance), and blamed their teammates (they felt the others would not try so hard on further trials). In contrast to findings from Thomas (cited above) indicating that tension was high in the group condition, Zander and Medow's solo subject more often reported a high state of tension.

Not only were Zander and Medow's teams particularly depressed by failure, but in all conditions (success and control as well) they lowered their expectations following trials on which their performance fell below their prior aspiration levels. After such "failures," individuals more often held to their original levels of aspiration. Evidence having exactly the opposite implication for another task is reported by Lichtenberg (1957). He found that failure in the initial stage of a cooperative task led to less reduction in perceived likelihood of eventual success than when a person worked independently. He suggests that failure in a cooperative task can appear to result from faulty coordination, a condition which subjects may believe to be correctable. The Zander and Medow task may well have discouraged this belief, a point to be discussed further below.

Zajonc (1962) compared group performance on a simple reaction-time task with the performance of the individual members during an earlier series of 20 trials. Even though the individual performances tended to approach an asymptotic level during the pretraining trials, subjects tended to perform even better under group conditions. Among the various group conditions, members gave their best performance when (1) group success depended on the reaction times of every member (rather than on only the best one—a conjunctive rather than disjunctive requirement) and (2) feedback gave the person information about his own and other members' performances (rather than merely about group success or failure).

It is interesting to consider Zander and Medow's task in terms of these criteria. In regard to the first, the subset of member actions on which group success depends is quite unclear (and perhaps highly variable). The second condition is certainly not met with their group shuffleboard task: a person has little way of knowing how adequate his own performance was, and his contribution to the total success or failure is hardly identifiable by the other members. Thus, the individual has little basis for knowing how to improve his own performance, nor need he be motivated to do so out of concern for his teammates' evaluations of his performance. This ambiguity and

anonymity of each member's contribution may well constitute the conditions which enable Zander and Medow's subjects to disengage themselves from their team's success or failure. And yet, identifiability of each member's contribution may provide the basis for blame-placing and deterioration of intermember relations when things become difficult for the group. [See our earlier comments on this point in relation to Hamblin's (1958) evidence of group disintegration under stress.]

The reader will note that the lower felt responsibility for the group performance, reported by Zander and Medow, is akin to the "diffusion of responsibility" concept employed by Wallach and Kogan to interpret the risky shift in group discussions. An important problem suggested here concerns the conditions under which the person's sense of responsibility becomes engaged (or released) by his membership in the group. In the latter connection one is reminded of ideas about the disinhibiting and releasing effect of membership in expressive and aggressive crowds (Brown, 1954) and the concept of deindividuation (Festinger, Pepitone, and Newcomb, 1952).

A series of studies bears upon the effects of group membership on the individual's reactions to arbitrary intrusions and frustrations by an external power figure. Wright's (1943) data on pairs of nursery-school children under frustration may be compared with those from Barker, Dembo, and Lewin (1941) for individuals in the same situation. Pairs, particularly when they are close friends, show less negative affect, maintain a more mature and constructive level of play, and are more aggressive in their actions toward the adult responsible for the frustration. Pepitone and Reichling (1955) find supportive evidence for the last point in an experiment with college students. Pairs given positive expectations about each other were more open in expressing their hostility about a person who had arbitrarily and unreasonably subjected them to insult.

Stotland's experiment (1959) is entirely consistent with the foregoing and also demonstrates further important consequences of the psychological support provided by colleagues. He assigned his subjects the task of planning a city using a map and materials representing buildings, houses, schools, factories, etc. Each individual worked on his own plan and under the supervision of another supposed subject. The latter was actually a confederate who exercised his veto authority in an arbitrary fashion, blocking without explanation certain lines of development in the subject's emerging plans. In an "alone" condition, each subject and his supervisor worked by themselves, with occasional recesses during which they adjourned to separate cubicles and read magazines. In a "membership" condition, two subjects (and their respective supervisors) worked simultaneously in adjacent rooms after being shown that their respective task assignments were the same. During the recess periods, the two workers were allowed to talk with each other, presumably because they had the same job assignment in the experiment. They used these opportunities to discuss the towns they were planning.

A comparison of the behavior of the subjects during the work period showed that those in the "membership" condition were ten times as likely to express hostility toward their supervisors as were those in the "alone" condition. They also expressed more disagreement with him and less often cooperated with him. They less frequently withdrew the ideas he had vetoed and, indeed, they persisted more in the pursuit of these ideas, trying to explain their moves to the supervisor. At the end of the work session, subjects in the "membership" condition were more negative and

critical in their evaluations of their supervisors. This may indicate that the "alone" subjects withdrew their interest from the task and were, therefore, less frustrated by the supervisor's arbitrary interruptions. Or, as Stotland suggests, the lack of support of a peer colleague may make it necessary for the solo individual to accept the power figure and somehow to find a degree of reasonableness in his behavior. In general, much as in Wright's earlier study, peer support is found to provide a basis for more mature and persistent behavior and for more open expression of aggression toward the powerful source of frustration.

The basis of this group-derived resistance to arbitrary authority has not been subjected to experimental analysis. One mediating mechanism of possible importance is indicated by the ingenious investigation by Merei (1949). Children who, as individuals and in the ordinary play group, were subject to control by the more dominant children were segregated and permitted to play for several days in subgroups of stable membership. During this period the subgroups developed traditions governing their play (ceremonies, seating order, ownership of toys, sequence of play, jargon, etc.). When the erstwhile dominant children were finally introduced into these subgroups, their influence was found to be sharply reduced. The subgroup traditions appear to have acquired control over the less aggressive children's behavior so that they were affected by the dominant child only within the framework of the traditions. The point seems to be that group members gain the ability to resist outside influence through the development of behavioral norms. One may speculate that norms afford this basis for resistance by providing each member with a behavioral pattern that he knows to be expected and approved by his peers.

These various suggestions as to the motivational effects of group membership may seem somewhat peripheral to our central concern in this chapter, namely, group problem-solving processes. However, these effects have implications for the quantity and quality of the motivation directed toward problem solving, as well as expressive or purely consummatory behavior. As Davis and Restle comment at the end of their excellent study of group problem solving: "Groups may have 'real-life' advantages which are not reflected in the experimental conditions studied here. For example, groups may persevere longer than individuals, thus enhancing the probability of a solution; group work may be conducive to higher or more appropriate motivation than work alone, etc." (1963, p. 116). Elsewhere (Thibaut and Kelley, 1959), we have emphasized the equally important fact that group effectiveness is not to be evaluated wholly in terms of the quality of problem-solving efforts. Solutions must be acted upon, and the ultimate success of a group depends perhaps as much on the quality of this action as on the quality of its "solutions." The coordinated joint action of many members necessary to the achievement of most group goals requires wide acceptance of the solution (as an appropriate means of gaining personal and group goals) and an adequate understanding of it. "If general participation in developing and planning a means heightens understanding of it and commitment to it, the group problem-solving process may be more economical in the long run than one that begins with the most expert thought and advice" (Thibaut and Kelley, 1959, p. 272).

Yet there is one more especially important reason for considering these motivational factors in the context of comparisons of groups and individuals as problem solvers. If groups are not always more efficient than individuals as problem solvers, they are not, for that reason, to be dismissed as objects of scientific investigation.

For group decision making is an inevitable and omnipresent phenomenon whether effective or not. So long as group members are interdependent in attaining their goals, they will wish to be involved in decisions regarding the priority to be given these goals and the means to be chosen for their attainment. The analysis of Buchanan and Tullock (1962) suggests that there will always be ambivalence in this wish, each person balancing the costs of widespread involvement in decision making against the risks of turning it over to a small executive subgroup. But this balance will usually be struck at a point such that committees of two or more persons are widely preferred. Faced with widespread desire for group decisions—indeed, faced with group decision making as an essential ingredient of interdependent life—we must understand and manage these processes as well as possible.

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Group Structure: Attraction, Coalitions, Communication, and Power

BARRY E. COLLINS, *University of California, Los Angeles*

BERTRAM H. RAVEN, *University of California, Los Angeles*

Current theory and research on small groups can be traced to both psychological and sociological predecessors. The former tradition adds "social" to "psychology" by focusing on the impact of other humans as an aspect of the environment. Triplett's early study (1898) of the rapidity with which an individual turned a crank in the presence or absence of coworkers is still typical of much of the research in this tradition (Zajonc, 1965). Sociological contributors have been more concerned with the *patterns* of social structure which are independent of the particular individuals comprising the group at a particular point in time. Emile Durkheim, for instance, though he theorized mainly at the level of the larger society, argued that small-group or face-to-face associations constituted the means by which the "constraints" of the society were transmitted to the individual. He was further concerned with the structural patterns as an "independent variable" which determined behaviors of individuals and the character of society. Technological development affected the division of labor; resulting changes in interpersonal relationships determined the characteristics of individuals in society.

To mention briefly a few names in the sociological tradition, we could begin with Durkheim, Vilfredo Pareto, Max Weber, and Gabriel Tarde. We could then trace a line by way of Charles H. Cooley and George Herbert Mead, with their interest in social role, through Theodore M. Newcomb, to the more recent developments in social role (see, for example, the book of readings by Biddle and Thomas, 1966). A second structural line could be traced through Georg Simmel, with his interest in

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communication and coalition structures, through Talcott Parsons, Jacob L. Moreno (sociometry), Robert Freed Bales (interaction process analysis), Alex Bavelas (communication networks), and Cartwright, Harary, and Norman (graph theory). Or one could, instead, follow a line to the current "social exchange" and "game theorists" as exemplified in John Thibaut and Harold H. Kelley (1959), later-day George Homans (1961), and Peter Blau (1964). These approaches have in common an emphasis on the structural relationships among persons and groups as determining behavior.

The personal or psychological tradition begins with Triplett, William McDougall, the alone-together studies of Floyd H. Allport (1920), J. F. Dashiell (1935), the studies of group pressures in industry by F. J. Roethlisberger and William J. Dickson (1939), and the conformity studies of Muzafer Sherif, Solomon Asch, Leon Festinger, and earlier Homans (1950). Here the emphasis is primarily on the persons and their psychological makeup, rather than on the structural patternings.

Although it has been relatively easy to classify early theorists along this dimension, more recent researchers become less readily classifiable—hopefully because they have learned from the experience of their predecessors. Several recent social-psychological texts, such as Newcomb, Turner, and Converse (1965) and Secord and Backman (1964), represent close collaboration between sociologist and psychologist, structuralist and personalist. This chapter attempts to further bridge the gap between these two traditions by analyzing some of the literature dealing with the psychological aspects of social structure in the small group. After an examination of several theoretical models of structure, we shall review the research dealing with the patterning of interpersonal attraction and cohesiveness, coalition formation, communication structure, and social power and social influence. Space limitations do not permit a complete review of all the literature on social structure. Useful reviews are presented in Cartwright and Zander (1953, 1960, 1968), Hare (1962), McGrath and Altman (1966), Bass (1960), and Collins and Guetzkow (1964), as well as in relevant sections of the *Annual Review of Psychology*.

Definition of group structure. The regularity of person-to-person and person-to-task relationships observed in many groups has led social scientists to search for a patterning of interpersonal relationships which can be considered in the abstract, transcending the personalities and idiosyncratic relationships of a given group. With perhaps more optimism than is justified, the concept of "structure" has been borrowed from the physical sciences. *Social structure* may be defined as the relationship among elements of a social unit. The *elements* may be individuals, or positions for which no individuals have yet been designated, as in a formal organization chart. The *dimensions* of structure (the ways in which the elements can be interconnected) include communication, attraction, prestige, role, power, locomotion, and dependence.

MODELS OF GROUP STRUCTURE

We have roughly divided the models of group structure into two groups. *Structure-oriented models* are concerned with the relatively invariant aspects of group structure. Although they place a greater emphasis on the description of a group at a particular point in time, several of them contain implicit or explicit propositions that the groups

will gravitate toward certain kinds of structures (for example, toward "balance," or toward transitive power relations). *Process-oriented models* place greater emphasis on changes in group structure which take place through time.

STRUCTURE-ORIENTED MODELS OF GROUP STRUCTURE

The search for social structure involves (1) the identification of the crucial or fundamental units or elements into which the social phenomenon may be decomposed, and (2) the determination of the appropriate dimensions with respect to which the elements are related to one another. One must then determine the appropriate tools for representing and analyzing the relationships. Many of the tools used by social scientists have been borrowed from logic and mathematics.

Algebra of sets

Group structure can be represented by symbols developed in the algebra of relations in formal logic. The elements in the structure might be represented by lower-case letters: a, b, c, d, e, \dots could stand for persons or positions (supervisor, line-worker, father, mother, brother, sister, teacher, student, \dots). The dimensions of social structure, represented by upper-case letters R, S, T, U, \dots , could indicate "communicates to," "has power over," "likes," "dislikes," "has greater prestige than," or more simple patterns of behavior like "hits," "pecks," "smiles at." For example, if L represents the relationship "likes" and L^- indicates "dislikes," then the eternal triangle would be represented by (aLb, bLc, aL^-c) , where a and b are two men and c is a much sought-after female. Heider (1946, 1958), Newcomb (1953), Jordan (1953), and Copilowish (1948) offer illustrations of such an approach to the study of interpersonal attraction.

Having selected the representational system provided by the algebra of sets, the social scientist can then utilize some of the tools of analysis provided by that system. The system also helps him to formulate questions. For example:

1. Is the relationship reflexive (aLa)? In other words, should the conceptual system allow a person to like himself, to have power over himself, etc.?
2. Is the relationship symmetric, that is, does aRb imply bRa ? In studies of sociometric (attraction) structure, L is ordinarily not defined as symmetric. In fact, much of the theoretical discussion attempts to specify the conditions under which symmetry will occur.
3. Is the relationship transitive; that is, do aRb and bRc imply aRc ? The love triangle illustrated above would suggest that liking is not always transitive. Transitivity would require that, once the girl makes a choice (fLb), the rejected suitor should like his victorious rival (aLb). On the other hand, it is not always intransitive. Consider that aLb and bLc do not necessarily preclude aLc . The question is then raised as to the conditions under which transitivity will occur.

Heider (1958) offers a number of hypotheses which can be examined by means of the algebra of sets. His approach, however, involves mainly the elements within an individual's cognitive system rather than the elements in a social group. The principal relations in Heider's system are L , the liking relationship, and U , the unit-forming relationship: L refers to any of a number of positive feelings for persons or

objects—"likes," "approves," "agrees with," "views favorably," "loves," etc.; U indicates such relations as "is part of," "owns," "is associated with," "belongs to," "created." Each of these relations also has its negative counterpart: L^- for "dislikes," "hates," "disapproves of," etc., U^- for "is distinct from," "is dissociated from," "is not part of," "disowns," etc.

One of Heider's major contributions is the concept of balance. The definition of balance is vague, but essentially it implies some sort of cognitive consistency between the relations. It can best be defined at this point by illustrations. Representative elements include p , a person, o , some other person or a group, and x , an object. Some balanced states are the following:

- (pLo, pUo) : p is a member of a group which he likes
- (pL^-o, pU^-o) : p is not a member of a group which he dislikes
- (pLo, oLp) : p is liked by someone whom he likes
- (pL^-o, oL^-p) : p is disliked by someone whom he dislikes
- (pLo, oLx, pLx) : p and his friend both like the same object

Examples of unbalanced states can be found by changing the sign of one relation in each of the above examples: for example, p is disliked by someone whom he likes, or p and his friend do not agree in their evaluation of some object. Heider posits a tendency toward balance. For example, one will either grow to like an object with which one is associated, or dissociate oneself from it. If one disagrees with a friend, either the friendship will cease, one's attitude will change, one will attempt to influence the friend to change, or the disagreement will be minimized or cognitively distorted. For a more extensive review of Heider's system, the reader is referred to Chapter 5.

Newcomb (1953) extends the Heider system to interaction between dyads, and Horowitz, Lyons, and Perlmutter (1951) extend it to larger groups. Other studies in recent years have extended the system even further (for example, Feather, 1964). Additional refinements and extensions have been made by the application of graph theory (Cartwright and Harary, 1956).

Although the algebra of sets is most frequently used for the analysis of interpersonal attraction, it can be applied to other types of relations as well. Both Cartwright (1959a, 1965) and Emerson (1962) use it in the analysis of social power. Emerson's presentation builds on the assumption that two dimensions of structure, power (P) and dependence (D), are inversely related to one another: aPb implies bDa . Such uses of the concepts and principles of the algebra of relations suggest a number of methods for examination and conceptualization of social-structure variables.

Graphic representations and graph theory

In graphic representations the elements of the group (persons, positions, subgroups, etc.) are represented by points or circles, and the relations among the elements are indicated by connecting lines. Various types of relations may be indicated by different forms of lines (for example, broken or solid, blue or red), by symbols or letters next to the line, by arrow points for directionality, and so on. The graphic representation, used in analysis of sociometric or friendship patterns by Moreno (1934), has been used widely in studies of communication structure and power

structure. Organizational structure has also been represented graphically, the lines indicate authority relations, and persons of higher authority are placed higher on the organizational chart (see Fig. 3). Graphic representation has a particular advantage in visual presentation, since points and connecting lines can be arranged so as to highlight the structural patterns. The existence of a clique, for example, could be emphasized by placing the circles representing members who choose one another in close proximity. The "liaison" persons, or "bridges" between cliques, then become obvious in the presentation. However, as with any pictorial representation, the flexibility of the placement of elements and lines allows for misrepresentation, the preconceptions of the observer might lead him to emphasize some relationships and deemphasize others, through the selective placement of elements. Furthermore, the procedure becomes unwieldy with large groups or with many relationships between elements. For a review of graphic representation of sociometric data, see Chapter 14.

Graph theory and structural balance In an effort to achieve a greater rigor than was available in graphic representations, the more sophisticated tools of graph theory, a branch of topology, were brought to bear on the data of group structure. The approach begins with Bavelas' article on communication structures (1948), followed by Harary and Norman (1953), Cartwright and Harary (1956), Harary, Norman, and Cartwright (1965), Oeser and Harary (1962), Flament (1963), Feather (1964), and others. The mathematics of graph theory is complex and continually evolving. Our brief introduction must of necessity be drastically oversimplified and imprecise.

Cartwright and Harary (1956) used graph theory to generalize Heider's notion of structural balance. The more powerful tools of graph theory would allow for an extension of Heider's approach to social systems involving several individuals, as well as an extension to systems other than liking and unit-forming relationships. Some definitions from Cartwright and Harary will illustrate their approach.

A *linear graph* is composed of a set of points ("vertices" or "nodes"), which represent the individuals or elements of the system under consideration, and lines connecting these points, which describe their interrelations (for example, liking or communication). A simple linear graph of a three-element system is presented in Fig. 1(a). Relations typically have two states (present-absent, positive-negative, 1-0), though this limitation can be circumvented by employing the concept of graph strength (Harary and Norman, 1953).

A *directed graph* or *digraph* is a graph in which the direction of interrelations is indicated. That is, a digraph conveys "from-to" information regarding the various interrelations depicted. Figure 1(b) shows a digraph derived from the same system as in Fig. 1(a). (J. O. Morrisette has pointed out, in personal communications, that it would be more precise to say that the digraph is the more general case. The linear, or ordinary, graph is a digraph in which each line is bidirectional.) A *signed graph* (or *S-graph*, see Fig. 1c) is derived from a linear graph by specifying relations, or lines, as positive (usually by means of a solid line) or negative (usually by a broken line).

Two other concepts are important: "A *path* is a collection of lines of a graph of the form AB, BC, \dots, DE , where the points A, B, C, \dots, D, E , are distinct. A *cycle* consists of the above path together with the line EA " (Cartwright and Harary, 1956, p. 283). In an S-graph, the "sign of a cycle" is defined as the algebraic product of

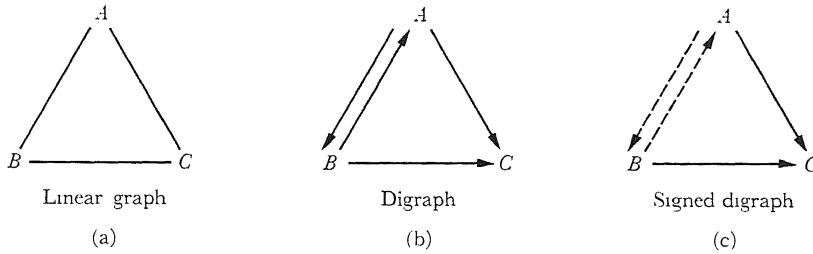


Fig. 1. Three types of graphs. The relationships in the digraph (b) and the S-graph (c) would both be represented as in (a) if one were restricted to a linear graph.

the signs of the lines making up the cycle. Thus, a cycle will be negative in sign when it contains an *odd number* of negatively signed lines. In all other cases it will be positive.

By Cartwright and Harary's definition, an S-graph is balanced if and only if each of its cycles is positive. By referring to the discussion above, one can see that this definition is consistent with Heider's. However, if larger numbers of persons and relations are to be considered, then the problem of examining each of the large number of cycles becomes impractical. Thus, several theorems were derived which simplify the determination of balance. The "similarity of paths" theorem states that "An S-graph is balanced if and only if all paths joining the same pair of points have the same sign." The S-graph in Fig. 2(a) is unbalanced, since the path BD is positive, while the path BCD is negative. Other paths between pairs of points also have different signs. By changing the relation between B and D (Fig. 2b) the graph becomes balanced, since BD is now negative as well as BCD and all other paths between B and D .

The above illustration suggests the structure theorem: "An S-graph is balanced if and only if its points can be separated into . . . mutually exclusive subsets such that each positive line joins two points of the same subset and each negative line joins points from different subsets" (Cartwright and Harary, 1956, p. 286). In Fig. 2(b), balance was achieved once the group was divided into a subset consisting of A , B , and C , and a subset consisting of D , E , and F , with G left as a separate subset (or

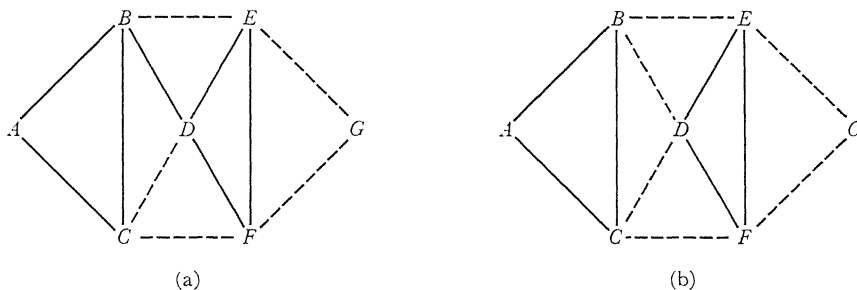


Fig. 2. An S-graph, unbalanced (a) and balanced (b) after change in sign of line BD .

isolate) Similarly, balance in larger groups will obtain when they are divided into subgroups or cliques such that all members of a given clique like one another while mutually disliking members of other cliques. The sociometric structure of the Capulets and Montagues was initially a happily balanced S-graph: all members of each clan liked all of their own members while detesting all members of the opposing clan. However, once a mutually positive relationship was established between the clans, through Romeo and Juliet (for reasons which are not readily ascertainable within graph theory), the S-graph became disturbingly unbalanced. The resulting behaviors can then be seen as following from the unbalanced state.

Whereas Heider merely considered a pattern of relations as either balanced or unbalanced, Cartwright and Harary also suggest that balance may be a matter of degree. They define the degree of structural balance of an S-graph as "the ratio of the number of positive cycles to the total number of cycles" (1956, p. 288). Thus, the degree of balance for the graph in Fig. 1(c) is .33. The degree of balance of the graph in Fig. 2(b) is 1.00. In checking the degree of balance in Fig. 2(a), the reader will likely be astonished at the number of cycles included in a seven-point graph.

The amount of theoretical and empirical work generated by the Cartwright and Harary (1956) article thus far has been disappointing. Davis (1963) employed a slight modification of the structural-balance model to "restate fifty-six sociological and social-psychological propositions" (p. 444). Feather (1964) reexamined a number of studies dealing with communications and attitudes in terms of graph theory and concluded that, with some modification and extension, it can be a very powerful tool. Flament (1963) also provided a useful examination of graph theory and its implications for communications and balance. Harary, Norman, and Cartwright (1965) reaffirmed their faith in the usefulness of graph theory with further re-examination of prior research and suggestions for the future.

In a study which was directly stimulated by graph theory, Morrisette (1958) presented subjects with three- and four-person relations involving the subject himself. Liking and unit-forming relations among individuals were presented within a role-playing context—subjects were to imagine that they were one of the persons specified. Not all the relations among persons were presented to the subject, and one of the tasks was to predict the unspecified relations. Morrisette hypothesized that subjects would predict relations whose sign would lead to a maximally balanced S-graph. Furthermore, he predicted that tension, as indicated on a questionnaire, would increase with the degree of imbalance in the predicted system. In the three-person groups involving positive unit relations (for example, *A* is a relative of *B*, *A* and *B* belong to the same group), the subjects tended to predict relations which provided a balanced social structure and, once the system was completed by the subject, the amount of tension reported varied inversely with the degree of balance. However, the predicted balance tendencies did not occur when negative unit relations were involved.

For four-entity systems, moreover, the data were not consistent with the hypotheses, except in very limited instances. It may be that individuals are cognitively unable or unmotivated to utilize more than the small cycles involving themselves when considering the balance of an entire group structure. Furthermore, it is to be stressed that Morrisette was working with the structure among the elements in the cognitive system of a single individual. His data do not specify what would happen among the elements of an actual group.

Rosenberg and Abelson (1960) have also extended Heider's theory of balance with a role-playing technique. Their studies examined the interrelations of two persons, a store owner (whose role would be taken by the subject) and his manager; and two interrelated objects, store sales and modern art. The manager seemed to have increased sales in the store. However, he favored modern art and wished to display it in the store. Moreover, there was a survey which indicated that modern art displays hurt sales. It is assumed that the owner favored increased sales. The experiment varied the owner's attitudes toward modern art and also his attitudes toward the manager. In addition, Rosenberg and Abelson varied the degree of positivity and negativity of the attitudes. The relations could readily be presented in terms of Cartwright and Harary's graphs, though Rosenberg and Abelson used a different graphic system.

Rosenberg and Abelson found some indications of a tendency toward balance, although attitude-change data indicate that few subjects actually achieved a state of balance. Communications indicating (1) that modern art displays actually increase sales, (2) that the manager does not really plan to display modern art in the store, and (3) that the manager had not really increased sales were presented to subjects. The communications were rated as persuasive to the extent that they increased balance in the network. Furthermore, Rosenberg and Abelson found an unexpected premature balancing of the system when the relations were maximally unbalanced: subjects tended to misinterpret or incorrectly remember statements leading to the unbalanced system in such a way as to achieve balance.

Newcomb (1953, 1961) has also proposed that balance theory be extended to objective interpersonal configurations or, as he calls them, "collective systems." Although his hypotheses and data are not presented in terms of linear graphs, such a translation would probably not be difficult. In *The Acquaintance Process* (1961), he finds that forces toward balance operate in ongoing naturalistic groups. He is primarily concerned with the structuring of affective relations (sociometric choice) as a function of attitudinal or value similarity. The basic hypothesis regarding collective systems is that a group tends toward a balanced state in which the various affective subgroups (sociometric cliques) are characterized by attitudinal agreement.

Graph theory and structural role theory Oeser and Harary (1962, 1964) and Oeser and O'Brien (1967) have presented an analysis of group structure in terms of graph theory. While the work to date makes little use of the procedures of mathematical graph theory, the potential is there. Furthermore, the particular set of concepts and assumptions used is typical of several descriptive analyses of group structure (for example, A. P. Bates and Cloyd, 1956; F. L. Bates, 1956, 1957).

Oeser and Harary suggest that a group can be decomposed into three classes of elements: tasks (or subtasks), positions, and persons.

1. *The task.* They note that all jobs are extended in time, are continuous or iterative, and demand that the people concerned with them be organized so that there will be a correspondence between the set of task elements and the set of people (1962, p. 90). Task elements, then, are one of the three classes of elements constituting a group structure.

2. *Positions* "Two quite general observations can be made about all groups that maintain a division of labor: first, the people who deal with the task elements are given generic names, such as teacher and students, laborers, carpenters, electricians,

plumbers, and bricklayers Second, once these names or titles have been assigned, people are exchangeable, but with certain significant restrictions" (p. 91). Not any person can fill a particular position; and, once in a position, a person is not completely free in how he relates to others on the task. "Thus, the definition of position 'secretary' enables us to identify (i) certain types of persons; (ii) their duties towards others in other positions; and (iii) their sections of the task system" (1962, p. 91).

3. *Persons.* According to Oeser and Harary, "People are real entities, but persons are not. By 'persons' we shall mean a set of attributes" (1962, p. 91). When we say that a position is "occupied by a person" we mean that someone has been assigned to, selected for, or promoted to that position. The fact that the position is occupied by a unique individual is irrelevant for the present analysis. "A 'person' who fills or who is assigned to a certain position clearly has no attributes other than those which are laid down in the 'worker specification,' that is, in the definition of a set of rules which enables a foreman or a school principal to select from a population certain persons to fill given positions" (1962, p. 91).

4. *Role.* A role is defined by the specifications which determine how a particular individual might be recruited into a position and the rules of action and interaction which regulate the behavior of a person assigned to a position.

Group structure is represented by a set of dots, some representing persons, some tasks, and some positions. Connecting lines are then used to represent the various "relations" among the elements of the social structure. One set of lines (connecting the task elements) specifies the relations among task elements. Another set of lines (connecting the position dots) specifies how one position is related to another position. The "formal structure," as defined in official tables of organization and constitutions, is typically such a chart representing the relations among positions. Other "formal" relations include those specifying which persons are assigned to what positions, and what positions are assigned to which task elements. People brought together in a "formal" relationship develop a number of other "informal" relations not specified in the table of organization. The graph is expanded to include such "informal" relations among persons as "communicates to," "likes," "respects," and "defers to."

Two of the graphs from the Oeser and Harary article will illustrate their system. Figure 3 represents the set of relations among the positions in a hypothetical five-man factory. Similar graphs could be drawn to represent the relations among tasks,

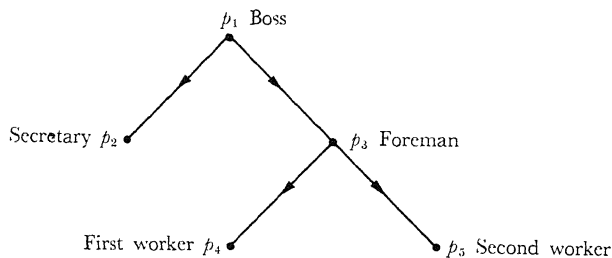


Fig. 3 *Authority relations among positions in a hypothetical factory with five employees. (From Oeser and Harary, 1962.)*

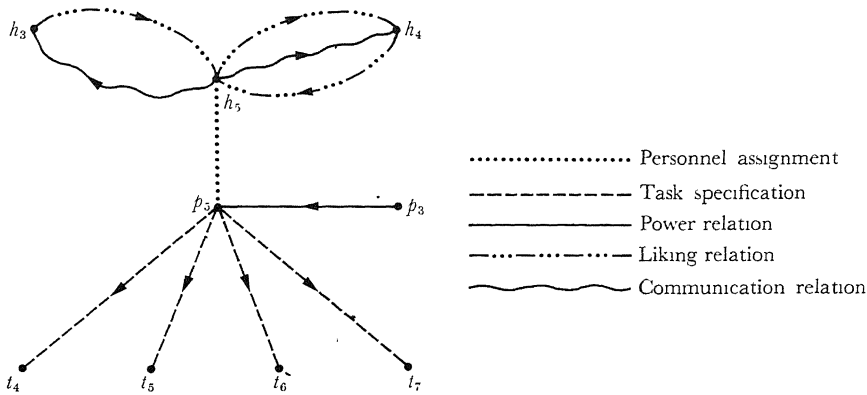


Fig. 4. All one-step connections about position 5. (From Oeser and Harary, 1962.)

the relationship between positions and tasks, and the relationship between persons and positions. Figure 4 represents all the possible relations of a particular position, the second worker. The solid line from p_3 to p_5 indicates that position 3 (the foreman) has a power relationship over position 5 (the second worker). The lines at the lower part of the figure indicate that position 5 has responsibility for task elements 4, 5, 6, and 7. The dotted line between h_5 and p_5 indicates that person 5 has been assigned to position 5. While unspecified in the organizational chart, the upper part of the figure indicates that person 5 has established certain informal relations (liking and communication) with both person 3 and person 4. We see, for instance, that persons 4 and 5 like each other but person 5 does not like his foreman (person 3). While person 5 does a lot of talking to both 3 and 4, persons 3 and 4 do relatively little communicating to him.

While not as yet realized, such a graph-theory model has a *potential* for mathematical manipulations. For example, we can form indices specifying the person-task relations—even though this relation is not explicitly indicated in the model (Oeser and Harary, 1964). Or we can specify the number of positions to which position 5 has access by one, two, or three liking links, communicational links, etc. Whatever its potential, however, the model at present has not been used to generate empirical predictions or experimental hypotheses.

Matrix representation of relations

Although graphic representation and the algebra of sets have advantages in terms of visual presentation of group structure and although they are intuitively meaningful, such advantages are lost as the size of the social unit increases. In that case, a matrix representation is often useful. Furthermore, the tools of mathematics, specifically matrix algebra and statistics, are more easily brought to bear on structural data organized within the matrix format. Forsyth and Katz (1946) played an important role in bringing the tools of matrix theory to the analysis of social structure. Group structure is represented by a matrix with cells, usually represented by small letters a, b, c, \dots , with the source along the vertical axis and recipient along the

TABLE 1
MATRIX REPRESENTATION OF ETERNAL TRIANGLE

Source	Recipient		
	First suitor <i>a</i>	Second suitor <i>b</i>	Female <i>c</i>
<i>a</i>	—	-1	+1
<i>b</i>	-1	—	+1
<i>c</i>	-1	+1	—

horizontal. A value for a given cell x_{ij} is found by inserting x in the i th row and the j th column. In the simplest analysis of structure, the values in the cells are binary: the number 1 is inserted if there is a relationship, 0 for no relationship. Unless the relationship is reflexive (aRa), the diagonal cells, x_{ii} , are left blank, or represented by — or 0.

Particularly in sociometric analyses, relations are often represented by bipolar values: attraction and rejection. Thus, we must include both positive and negative values in the matrix. For illustration and comparison, we again represent the eternal triangle (Table 1); here, however, we have added values indicating the female's rejection of the first suitor and attraction toward the second. The matrix representation allows for indication of the strength of a relation, through the use of weighted entries — a strong liking relation could be indicated with +3.

Other advantages of the matrix representation become evident in Table 2, which represents the S-graph from Fig. 2(a). Note that, as in graphic representations, there are advantages to changing the location of elements. By placing elements which are positively related close to one another, by moving the "plus" cells as close as possible to the diagonal, the "cliques" or mutual relationships become more immediately obvious. In Table 2, we altered the location of b and c in both the horizontal and vertical for this purpose. Katz (1950) has devised a computer technique for

TABLE 2
MATRIX REPRESENTATION OF UNBALANCED S-GRAPH (FIG 2a)

Source	Recipient						
	<i>a</i>	<i>c</i>	<i>b</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
<i>a</i>	—	+1	+1	0	0	0	0
<i>c</i>	+1	—	+1	-1	0	-1	0
<i>b</i>	+1	+1	—	+1	-1	0	0
<i>d</i>	0	-1	+1	—	+1	+1	0
<i>e</i>	0	0	-1	+1	—	+1	-1
<i>f</i>	0	-1	0	+1	+1	—	-1
<i>g</i>	0	0	0	0	-1	-1	—

rapid rearrangement of large matrices. The matrix is then partitioned to emphasize the cliques and the "isolate" status of g . This also highlights the source of imbalance: the mutual positive relation between b and d . Figure 2(b) would have a similar matrix representation except that both x_{bd} and x_{db} would be negative. If we can assume that Table 2 also indicates communication possibilities, we see that b and d perform important functions for the group, since they provide a bridge for communication between the two cliques. Weiss (1956) showed how matrices could be used to find such liaison persons in large organizations.

Other applications of matrix algebra to sociometric data have been enumerated by Katz (1947, 1950). Festinger applied matrix multiplication to analysis of sociograms (1949). By squaring a matrix, we can determine mutual pairs, and also two-step connections (a is positively related to d through b). Cubing a matrix will indicate cliques, as well as three-step connections (Chabot, 1950; Luce, 1950). Glanzer and Glaser (1959) have reviewed other applications of matrix analysis to group structure. The availability of computers seems to have stimulated a sizable body of research on matrix analyses of group structure.

PROCESS-ORIENTED OR DYNAMIC MODELS OF GROUP STRUCTURE

The following models place a relatively greater stress on changes in group structure over time. Most of them also emphasize the interdependence between influences which are external to the group itself and influences which stem from within the group. Five of these theoretical approaches will be reviewed here.

Homans' internal and external system

Perhaps more than any of the other model constructors reviewed in this chapter, Homans (1950) has made a special effort both to identify the crucial elements of group structure and to specify how these elements are interconnected.

The elements of social behavior are (1) *activity* (the acts which the individual members perform), (2) *interaction*, which includes interpersonal communication but also involves interdependent behavior (for example, two men sawing a log becomes interaction rather than merely activity if the actions of one are partly stimulated by the other), and (3) *sentiment* (the positive or negative feelings which members have for one another). (To these elements, he adds a group-level element of *norms*—the standards and expectations which the group develops.) Homans postulates that the three elements are interdependent: an increase in one will produce an increase in the others. Thus, increased activity leads to increased sentiment and interaction; an increase in sentiment produces an increase in activity and interaction; and so on.

According to Homans, each group has a boundary. External to this boundary is the environment, which may be physical, technical, or social. It will be necessary for the group to solve certain environmental problems if it is to survive in that environment. The very fact that the group is currently existing in the environment implies that the members have successfully initiated behavior to solve these problems of survival. Those elements of group behavior (activity, interaction, and sentiment) which have their source in the solution of environmental problems are called the *external system*. Note that the activities, interactions, and sentiments are not external to the group; it is the *function* served by the system that is external.

Homans suggests, however, that social life is never completely devoted to problems of survival in an external environment. Another set of group behaviors is instigated by internal problems. The very group behavior originally generated to solve an external problem will generate new behavior not *directly* initiated by the environment. The elements of behavior (activity, interaction, and sentiment) which have their source in the activities, interactions, and sentiments of the group itself Homans calls the *internal system*. Note that both "systems" have the same content—the activities, interactions, and sentiments of the group members. They differ in the functions that they serve. The two systems are interrelated to such an extent that, as Homans (1950) has indicated, it is almost impossible to separate them operationally.

Bales's equilibrium problem

Most of Bales's work has focused on the Interaction Process Analysis (see Chapter 13) as it relates to the differentiation of leadership roles and stages in group problem-solving (Bales, 1958), neither of which is directly relevant to our immediate concern with group structure. In one paper, however, Bales (1955) focuses on the interaction between the task and interpersonal dimensions of group structure. In particular, he suggests that the increased differentiation of roles and stratification (structure) which facilitates task activity will create interpersonal difficulties.

Reasoning by analogy from the study of complete societies, Bales (1955) suggests that the necessary adaptation to the outer environment leads to (1) increased division of labor, (2) greater distribution of property, (3) authority differences, and (4) status distinctions. These changes in group structure disturb the state of solidarity, restrict the individual, and make more demands on individuals performing the task roles. In other words, the group begins to disintegrate.

The strains created by this differentiation produce pressures for integration. This emphasis on solidarity will work in opposition to the differentiation necessary for adaptation to the outer situation described above (Bales, 1955, pp. 127–131). Thus, all groups are caught in a state of transient equilibrium which results from these two opposing forces. This analysis is important because it suggests that the group structure most effective for task purposes may not be most satisfying interpersonally. Thus a particular group structure may be under opposing pressures from the task and from the interpersonal needs of the group members.

Cattell's "group synergy"

Cattell begins his theory with an analogy from individual psychology. Syntality "defines for the group precisely what personality does for the individual. It is, therefore, that which determines the organism's [group's] reactions when the stimulus situation is defined" (Cattell, 1953, p. 16). Cattell does not define the existence of a group in terms of interaction and communication, reciprocal roles and common norms, or an abstract boundary. Rather, he states: "A group is a collection of organisms in which the existence of all (in their given relationships) is necessary to the satisfaction of certain individual needs in each" (Cattell, 1953, p. 20).

Cattell's discussion of the dichotomy between member-to-member and member-to-task behavior is as follows (1953, p. 22).

The sum total of the energy which any group can command and expend I have called synergy; and the synergy will be a function of, for example, the number of members and the strength of group interest of each. It is easy to perceive that this synergy is expended broadly in two ways which are distinct in important respects. First, a substantial part, which we may call *maintenance synergy*, will be used up in the internal machinery which keeps the group in being, leaving the residue, which we call the *effective synergy*, to carry out those purposes for which the group explicitly exists.

For the most complete review of Cattell's analyses of small groups, see Cattell and Stice (1960).

Roby and Lanzetta

Roby and Lanzetta (1958) suggest that we classify the characteristics of the task which govern group behavior into four categories:

1. *Task input variables* Task input variables are *objective* conditions in the environment. They might include the written statement of a "think" problem, a bottle of beans to estimate, or a lag in productivity which must be overcome.
2. *Group input activities*. Group input activities occur within the group. They are roughly those aspects of *group behavior* which are concerned with ascertaining information (largely information about the task input variables) and communicating this information to other members of the group.
3. *Group output activities* Group output activities also occur within the group. They are, roughly, those aspects of *group behavior* which are concerned with doing things. They include behavior which attempts to decide what should be done, as well as the actual behavior involved in finally "doing it."
4. *Task output variables*. Task output variables, like task input variables, are *objective* conditions outside the group in the environment. They might include the written solution to the "think" problem, the actual number of beans suggested, and the solution to the productivity problem. If the group were a management committee which had authority for changing the production line, the changes in the line themselves would be task output variables, because they were produced by the group behavior (output activities).

This general analysis leads Roby and Lanzetta to argue that we should analyze a task (or any environmental factor) in terms of its *critical demands* (1958, p. 95):

We may expect that the most fruitful method of classifying group tasks will be with reference to those aspects of group behavior or procedures which these tasks bring to the foreground. In other words, we would expect that the distinctive features of particular tasks will be the degree to which they require certain group behaviors for adequate performance. Such behavioral requirements will be referred to as "critical demands."

While this system does not have immediately obvious relevance to group structure, it does specify a number of "elements" which can be readily measured.

Factors molding interpersonal behavior and task performance

Collins and Guetzkow (1964) developed a model incorporating many of the ideas previously discussed. This model includes the concept of an interaction between task and interpersonal systems suggested by Homans and by Bales, the emphasis by Cattell and by Thibaut and Kelley (1959) on the fact that the mere maintenance of the group constitutes a problem in and of itself, and the potential for operational definitions provided by the Roby and Lanzetta model.

The Collins and Guetzkow model is built on a fourfold classification of the stimuli impinging on a single group member. The first distinction separates those stimuli which are *external* to the group (that is, make up the task environment) from stimuli which are *internal* to the group (that is, current behavior of other group members or the mere presence of other group members which, presumably, produces expectations of future behavior).

A second, crosscutting classification distinguishes between stimuli that are *obstacles* and stimuli that are *rewards*. An obstacle is an aspect of the individual's environment which constitutes a problem, that is, blocks, inhibits, or limits group productivity. A task-environmental obstacle would be a problem external to the group (for example, Roby and Lanzetta's "task input variables"), while an interpersonal obstacle would be a problem generated by the behavior of other group members. Obstacles define the problems of the group and its members, instigate group behaviors, and limit productivity. Rewards, on the other hand, serve to mold, maintain, and motivate group behaviors. When applied, rewards increase the probability that the behavior with which they are associated will occur again. Such reinforcing (molding, maintaining, and motivating) events may originate in the task environment (accomplishments of the group), or they may originate within the group (the presence or behavior of other group members).

An important point of emphasis in the Collins and Guetzkow model is that obstacles in the environment can create interpersonal as well as task difficulties. As will be reviewed later, Guetzkow and Simon argue that the limitations of a communication net do not increase the difficulty of the group task; rather, they increase the interpersonal problems associated with getting organized. Another point of emphasis is that interpersonal rewards can serve to reinforce task-related behaviors. Thus, the leader may be given such interpersonal rewards as status and deference in order to reinforce his contribution to the group's task efforts. Furthermore, since interpersonal rewards can be applied immediately to a specific individual, they are an important supplement to task-environmental rewards, which are often administered indiscriminately to the entire group after a great time delay. Finally, the model stresses that the mere presence of other group members often presents greater obstacles in the way of task accomplishment (such as needs for solidarity) than do the obstacles associated with the task itself.

A diagram of the Collins and Guetzkow model is presented in Fig. 5. The model identifies two sources of problems or obstacles for the group, and notes that these obstacles give rise to both group (coordinated) and individual (uncoordinated) behaviors. These behaviors eventually result in some sort of group productivity. This productivity may be traced either to a summation of simple individual activities or to some sort of assembly effect which produces a greater group productivity than could have been accomplished by the individual members working in isolation.

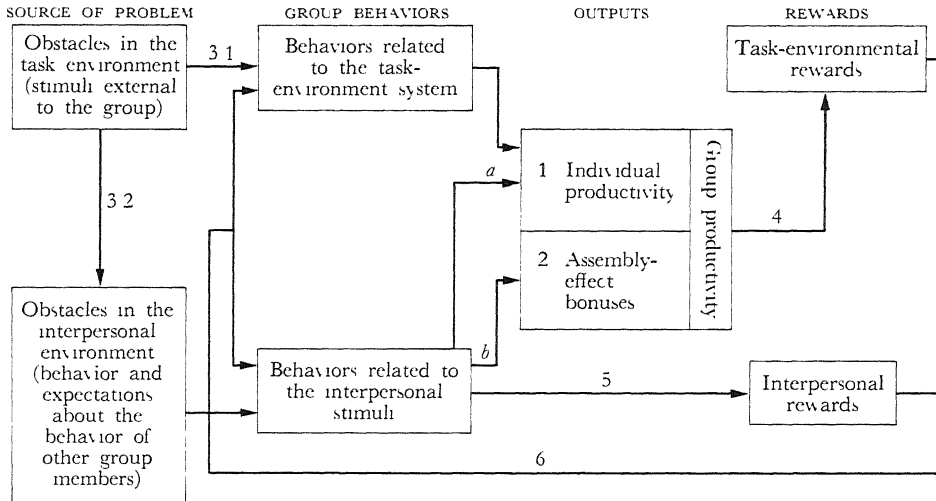


Fig. 5 A simple working model of decision-making groups

Collins and Guetzkow (1964, pp. 35–61) argue that groups are capable of an “assembly effect” in which the group as a whole is able to achieve more in concert than could be achieved if the individual efforts were simply summed, or if the output from the group’s most qualified member were credited to the group (see Collins and Guetzkow, pp. 58–61, for a more complete discussion). Since group productivity is an output variable which exists in the task environment, it constitutes feedback by which the environment reinforces the group for its productivity.

But the group is not entirely limited to rewards provided by the environment. Since interpersonal rewards stem from the behaviors of other group members, it is possible for these interpersonal rewards to be generated independently of group productivity. Of special importance is line 6, which indicates that both kinds of rewards (task-environmental and interpersonal) can mold, maintain, and motivate any group behavior, whether that behavior is immediately related to a task-environmental obstacle or an interpersonal obstacle. Thus, it is possible for the group (through interpersonal rewards) to mold, maintain, and motivate behaviors which do not make a direct contribution to group productivity (or which even reinforce behaviors detrimental to productivity). Thus groups could use interpersonal rewards to mold, maintain, and motivate nonadaptive behaviors. But, since it is impossible to live on love and status alone, it is likely that most interpersonal rewards are used to facilitate and augment the impact of the task-environmental rewards; that is, interpersonal rewards are administered in such a way as to increase long-term group productivity.

In fact, interpersonal rewards are vital in order to maintain effective task activity. In conditions of common fate, every member of the group is treated identically by the environment (see Collins and Guetzkow, 1964, pp. 69–87; Egerman, 1966; Glaser, Klaus, and Egerman, 1962; Hall’s 1957 discussion of “socially confounded feedback”; Rosenberg, 1960; and Zajonc, 1962). In these common-fate conditions,

everyone is reinforced equally without respect to whether his behaviors enhance or inhibit group productivity. Furthermore, the feedback from the environment is far removed from the particular moment-to-moment group activities of an *individual* group member. Even without the ambiguity (to an *individual* group member) of group reinforcement in common fate, the typical long-time delay of task-environmental rewards means that task-environmental rewards are seldom of any use in shaping the specific and immediate task activities of a given individual group member. If the group is to mold, maintain, and motivate those behaviors which will eventually produce task-environmental rewards (success), the group must have available such interpersonal reinforcers as status, deference, etc., which can be applied and withdrawn *immediately* following the specific activity of a *single* group member.

Evaluation of process models

With the possible exception of Homans' proposition about interaction and sentiment, the process models just reviewed appear to have had little, if any, effect on empirical investigations of social structure. There are, however, a few useful implications buried in these models. For example, the extent to which interpersonal considerations affected the task output of work groups in the Westinghouse factory—a point stressed in most dynamic models (Homans, 1950; Roethlisberger and Dickson, 1939)—came as a surprise to many social and economic theorists. Similarly, the problems in using purely task-environmental objective feedback to shape the behavior of an individual group member may not be obvious.

Another insight gained from the process models is that a group of individuals, on leaving their respective private lives to enter into group interaction, are inevitably faced with *two* sets of problems: the objective task problem listed on the agenda, and a problem of interpersonal organization. The group may spend valuable time and resources trying to solve these problems of interpersonal relationship (or may so thoroughly fail to solve them that the task is never even undertaken). On the other hand, we should not rule out the possibility that, once the interpersonal organization has been developed, the group may accomplish more than its most capable member could have accomplished alone, and even more than the sum of the individual group members working alone (Collins and Guetzkow, 1964, Chapter 2).

The "group-versus-individual" literature has been discussed in Chapter 29, and we will not elaborate here. The process models do stress, however, that the presence and behavior of other group members do present obstacles which must be overcome, often at considerable cost. But, as was argued above, the potential of the group once the interpersonal obstacles are overcome can often exceed the resources of the group members working in isolation.

In short, the process models do seem to contain a number of interacting propositions and hypotheses. Nevertheless, the fact that these process models have stimulated so little research raises an interesting point: why not keep the relatively simple hypotheses and discard the models? While the influence of the process- and structure-oriented models might be judged high if we noted the number of references in the discussion sections of papers, their influence would be almost nil if we counted cases in which they were cited in introductory sections as having generated hypotheses

for experimental or field studies. It is with some disappointment, then, that we are unable to review a significant portion of the *empirical* data on group structure under the same headings under which we have reviewed the more *theoretical* treatments of group structure.

EMPIRICAL INVESTIGATIONS OF GROUP STRUCTURE SOME DIMENSIONS OF INTERPERSONAL RELATIONS

The early concern with the pattern of likes and dislikes among group members has extended to include any pattern of relation (for example, communication, power, deference). In the language of Oeser and Harary, there are a number of "relations" which bind the segregated elements of a group together into a single structure. Once the group has been broken down into elements, it remains to specify and measure the dimensions along which they are interconnected into a unitary structure.

Although the Oeser and Harary model specifies several types of relations (task-to-task, task-to-position, position-to-position, position-to-person, and person-to-person), most attention has been devoted to person-to-person or interpersonal relations. A number of interpersonal relations which could be studied include attraction or sociometric status, coalitions and/or interdependence, communication, power, prestige, role structure, leadership, and locomotion. The following sections, however, review the literature only for attraction, coalitions, communication, and power. Because of the vast amount of research on power structure and social influence, a separate section is devoted to these topics.

INTERPERSONAL ATTRACTION, SOCIOMETRIC STATUS, AND GROUP COHESIVENESS

The source, nature, and measurement of interpersonal attraction have been discussed elsewhere in this *Handbook* (Chapter 14). The interpersonal-attraction literature has been reviewed under the heading of "group cohesiveness" by Cartwright and Zander (1953, 1960) and by Lott and Lott (1965); other relevant reviews would include three chapters in the 1954 *Handbook of Social Psychology* (by Kelley and Thibaut, Lindzey and Borgatta, and Riecken and Homans), as well as Roseborough (1953) and Van Bergen and Koekebakker (1959). We shall not attempt to add another comprehensive review of interpersonal attraction or group cohesiveness; but we will try to sketch briefly some of the consequences of interpersonal attraction. In other words, we shall consider the patterning of attractiveness as a *structural characteristic* or *independent variable*.

A definition and theory of group cohesiveness

Although we have decided to discuss group cohesiveness under the general heading of interpersonal attraction, it is typically defined more broadly: "The resultant of all the forces acting on all the members to remain in the group" (Cartwright and Zander, 1960, p. 74). Even this definition performs rather violent surgery on the concept as it is sometimes used. The concept of group cohesiveness has been with us from the beginning of experimental social psychology and is rich with surplus

meaning. Before limiting themselves to the above definition, Cartwright and Zander (1960, p. 69) illustrate the far-ranging aspirations held by many investigators for the concept:

Why is it that the attendance of one group is so irregular as to result in its slow death, while the attendance of another group with similar activities and leadership remains high? What makes a group "healthy" so that its members work harder, make more sacrifices to the group, more readily extol its virtues, seem happier together, interact more often, and agree with one another more readily than do members of a dying organization?

There are two reasons why many investigators have defined group cohesiveness as the ratio of ingroup to outgroup sociometric choices, that is, as the patterning of interpersonal attraction. First, the process of experimentation and field research often requires that broad and complex concepts be broken down into simpler components. Second, investigators report little if any correlation among several measures of group cohesiveness (for example, Eisman, 1959). Back (1951) found greater communication and convergence in attitude as a function of increased cohesiveness. This was true whether cohesiveness was based on (1) personal attraction, (2) importance of the task, or (3) prestige through membership. However, he also reported some qualitative differences in communication and social influence depending on the basis for "cohesiveness."

Although the ratio of ingroup to outgroup choices remains the most popular *operational* definition of group cohesiveness, there may be some value in maintaining a somewhat more broadly gauged theoretical or literary definition. We need a concept which refers to *those forces which act to keep a person in the group and prevent him from leaving*. "Cohesiveness" seems the most likely candidate.

Consistent with the resultant-forces definition, Thibaut and Kelley (1959) theorize that the tendency for an individual to remain in the group is a function of (1) the outcome he gains through membership and (2) the outcomes he would be able to obtain in the most desirable alternative group. The higher the outcomes available through the present group, the *higher* the cohesiveness; but the higher the outcomes available through the most desirable alternative, the *lower* the cohesiveness. It is probably useful to maintain the traditional distinction between the group itself as a source of outcomes (interpersonal rewards) and the group as a means of obtaining outcomes outside the group (task-environmental rewards).

A direct operational definition for the theoretical definition proposed above is probably impossible in most practical situations. A straightforward operationalization of the Thibaut and Kelley theoretical definition would require that the investigator measure all the outcomes, both intrinsic and extrinsic, accruing to a group member as a result of his group membership. Each of these outcomes would then have to be weighed in terms of its importance to the group member, and some sort of summary index created. Then it would be necessary to measure similarly the outcomes available in the best alternative group. The difference in the outcomes between the present group and the best alternative group, somehow summed across group members, would be the measure of group cohesiveness. The technical problems associated with this operationalization are obvious.

An alternative approach to the objective measurement of outcomes would be to ask the group members to make an evaluative judgment about the outcomes obtainable in the present group and those obtainable in their best single alternative. Collins (1963), in a laboratory experiment, did find that such a measure was correlated with turnover and that the judgmental measure of cohesiveness was sensitive to a manipulated increase in extrinsic rewards. Unfortunately, the traditional measures of cohesiveness were not obtained; so the correlation between this measure and the traditional measure is not known. Several studies using more standard measures have found greater cohesiveness in a group if that group is more likely to succeed than others (Deutsch, 1959) and if one's own group shows more success than other groups (Seashore, 1954; Stotland, 1959).

The *ratio of ingroup to outgroup choices* may be the most common operational definition for group cohesiveness, because interpersonal attraction is both a cause and an effect of group cohesiveness. On the one hand, interaction with liked and liking group members is probably an important outcome in and of itself (Collins and Guetzkow, 1964, pp. 125ff). Thus, the fact that group members like each other increases the outcome associated with group membership and is a *cause* of cohesiveness. On the other hand, extrinsic outcomes, such as success on the task, increase interpersonal attraction. Thus, a high degree of ingroup interpersonal attraction is also symptomatic of (that is, results from) sources of outcomes not related to friendship. Furthermore, the number of outgroup choices probably reflects the value of alternative groups. Hence, the ratio of ingroup to outgroup sociometric choices is both a cause and an effect of group cohesiveness, and is thus a good practical or "empirically keyed" index of cohesiveness.

Consequences of attraction-cohesiveness

While reviews of the cohesiveness literature are usually more detailed than is appropriate here, readers familiar with the Cartwright and Zander (1960) and the Lott and Lott (1965) reviews will recognize the contribution these reviews made to the present discussion. In the following sections we shall restrict ourselves to a discussion of attraction as a structural characteristic or independent variable.

The variables discussed below make up a syndrome of causally interconnected variables. Although the major emphasis is on interpersonal attraction as a cause, one consequence of cohesiveness can cause another; and many of the "consequences" can cause interpersonal attraction. Interpersonal attraction, for instance, may lead to increased influence; but it also seems likely that we like those who influence us. Similarly, high interpersonal attraction may increase the probability that the group will stick with the task long enough to ensure success, and success on the task (that is, increased outcomes) is one of the major determinants of interpersonal attraction. Similarly, interpersonal attraction creates a greater similarity of values and attitudes among the group members; but similarity of attitudes and values is probably the major determinant of interpersonal attraction. Finally, as was previously argued, interpersonal attraction may be a good measure of group cohesiveness as much because it is an effect of favorable outcomes as because it is a cause of heightened outcomes in and of itself. Whatever their initial impetus, these interwoven causal processes do produce a reliable syndrome which characterizes the highly cohesive group.

Responsible activity According to Cartwright and Zander, "Those who are highly attracted to the group more often take on responsibilities for the organization (Larson, 1953), participate more readily in meetings (Back, 1951), persist longer in working toward difficult goals (Horwitz, Exline, Goldman, & Lee, 1953), attend meetings more faithfully, and remain members longer (Sagi, Olmsted, & Atelsek, 1955; Libo, 1953)" (1960, p. 89). When the outcomes available through the group are higher than the comparison level for alternatives, then an individual must work through the group to achieve his ends. Although our major emphasis is on the consequences of cohesiveness, responsible activity may also be a cause of cohesiveness. It is tempting to speculate that group interaction initially undertaken because there was no satisfactory alternative is the first step in the causal process which eventually produces the several consequences of cohesiveness documented below. According to the logic of Homans' *The Human Group* (1950), an increase in group activity will be followed by an increase in both interpersonal attraction and interaction. An individual may find himself in a position where he cannot obtain his outcomes without participating in group interactions. If the group's efforts are a success, his participation in the group is a reinforcing experience and his attractions to the group are increased. In the meantime, his task-oriented activities have generated new friendships in the group and these friendships, as well as the success of the group on the initial task, increase his attraction to the group. Now that he values the interaction with his newfound friends, he is more likely to turn to the group as a means to solve his next objective problem, which in turn leads to more interaction—and so on.

But to say that the causal process of group cohesiveness is initiated when an individual chooses group activity in preference to other alternatives can only be speculation. The most common method of manipulating group cohesiveness is to manipulate the interpersonal attraction among the group members. Therefore, nearly all the research reviewed here demonstrates a causal relationship initiating in interpersonal attraction and terminating in the various consequences of group cohesiveness to be discussed below.

Satisfaction and morale. Since there is an extensive literature relating high rewards or outcomes to high satisfaction (Collins and Guetzkow, 1964, pp. 188ff), it should not be surprising that the standard cohesiveness manipulations and measurements should correlate with satisfaction and morale (Exline, 1957; Marquis, Guetzkow, and Heyns, 1951). High outcomes produce cohesiveness and high outcomes produce satisfaction and morale. Furthermore it is not implausible that interpersonal attraction should produce satisfaction and vice versa.

Evaluation of others. Persons tend to perceive liked others as being similar to themselves and as having mutual feeling toward them; they will tend to judge favorably the behavior of liked persons. Persons with favorable attitudes toward each other also tend to be more accurate in estimating feelings (Suchman, 1956) and in perceiving task-oriented behavior (Exline, 1957).

Communication. It is again necessary to state that communication is both an effect and a cause of interpersonal attraction. "If the frequency of interaction between two or more persons increases, the degree of their liking for one another will increase, and vice versa" (Homans, 1950, p. 112). In support of the correlation between the two variables, Turner (1957) found that higher than average interaction rates were associated with liked foremen, and lower interaction rates were associated with un-

liked foremen. Lott and Lott (1961) also reported a correlation between attraction and communication. Considering attraction as a dependent variable, Bovard (1956) reported increases in interpersonal attraction when interaction was encouraged in his honors classes. Kipnis (1957) reported that both physical closeness and functional closeness (both of which lead to increased interaction) were positively related to interpersonal attraction. Turning to attraction as an independent variable, Kelley (1950) reported an increase in interaction when a substitute teacher was introduced as being "warm." Similarly, Back (1951) and Dittes and Kelley (1956) found increased interaction as a result of manipulated cohesiveness. In fact, the causal relationships between interpersonal attraction and communication are probably among the best-established propositions in social psychology.

In somewhat related studies, Grossack (1954) found that his cooperation instructions increased communication. Cervin (1956) found that subjects communicated more with an experimental accomplice who agreed with them than with one who disagreed. Runkel (1962) reported that channels of communication are likely to parallel feelings of respect among schoolteachers.

Interpersonal influence. Perhaps the most widely reported characteristic of cohesive groups is the greater tendency of individual group members to influence and be influenced. Using the standard instructions designed to increase the congeniality of group members, several investigators found evidence of greater influence (Back, 1951, Berkowitz, 1954; Festinger *et al.*, 1952; Schachter *et al.*, 1951). Other investigators have reported a greater rejection of the deviant in highly cohesive groups (Emerson, 1954; Schachter, 1951; Schachter *et al.*, 1951). Festinger (1950) reports correlational data to support the greater rejection of deviants in highly cohesive groups. Gerard (1954) reports that subjects show greater resistance to changing an opinion if it is anchored in a highly cohesive group.

Further data on the relationship between cohesiveness and interpersonal influence comes from the modeling literature. Although not a necessary condition for imitation, an imitator is more likely to match the behavior of a liked model than a neutral or disliked model. To consider just one example, Grosser, Polansky, and Lippitt (1951) found that an experimental confederate was more likely to be imitated when he behaved in a friendly fashion toward a coworker than when his behavior was unfriendly. Other studies consistent with the above will be reviewed below in a separate section on social power.

Task performance. There are a number of studies which report that work groups composed so as to include friends show higher productivity (Bjerstedt, 1961; Husband, 1940; Van Zelst, 1952a, 1952b); and other investigators have found correlations between measures of interpersonal attraction and productivity (Berkowitz, 1956; Chapman and Campbell, 1957; Darley, Gross, and Martin, 1952; Gardner and Thompson, 1956; Goodacre, 1951, 1953). But there are also studies which fail to demonstrate a relationship between interpersonal attraction and productivity (Horsfall and Arensberg, 1949; Marquis, Guetzkow, and Heyns, 1951; Philp, 1940).

Although task success (if associated with increased outcomes) should increase attraction, there is little theoretical reason to believe that group cohesiveness should be related causally to high productivity in a simple manner. Only in the special case where high productivity is instrumental to being liked is there any reason to expect that liking *per se* should facilitate productivity. In other cases, liking may

inhibit productivity. If a group member belongs to a group primarily because he likes to interact with his friends, then the objective rewards associated with high productivity should have relatively little influence on him. Schachter *et al.* (1951) and Berkowitz (1954) found that highly cohesive groups were more responsive to the group norms. But when the group norm called for low levels of productivity, members of highly cohesive groups inhibited the productivity to a greater extent than low-cohesive groups with the same norms.

Learning. As was the case with group productivity, it is an inappropriately general question to ask whether interpersonal attraction facilitates or hinders learning. It is necessary to study the specific mechanisms by which all the variables associated in the cohesiveness syndrome affect learning, and then construct a list of conditions under which cohesiveness might be expected to facilitate, inhibit, or have no impact on learning. Nonetheless, Shaw and Shaw (1962) reported that individual spelling scores were correlated with group cohesiveness early in interaction but not late in interaction. Lott and Lott (1965) review other studies which relate such variables as group- versus leader-centered classrooms and permissive versus authoritarian leadership to group learning.

Lott and Lott (1965) also discuss the impact of cohesiveness on the expression of hostility and self-evaluation, but the data they present are either anecdotal or conflicting.

Postscript: cliques, sociometric or "support" subgroups

Problems of cliques (subgroups formed on the basis of interpersonal attraction) concern us here for at least two reasons. First, the presence of several highly cohesive subgroups within a single larger group could lead to the false impression that all members owe an allegiance to the entire group. Festinger, Schachter, and Back (1950) note that the ratio of ingroup to outgroup sociometric choices may fail to distinguish between a kind of cohesiveness in which every member is attracted to the entire group and a cohesiveness built on a number of subgroups. "For example, a group of 8 people all making choices within the group might or might not have high cohesiveness as a total group. As an extreme illustration, there conceivably might be two subgroups of 4 people each, every member within each subgroup choosing every other member but without any choices at all between subgroups" (Festinger, Schachter, and Back, 1950, p. 94).

Since the forces acting to keep the individual within the group *as a whole* probably decrease as subgroups form, a measure of "global" cohesiveness should decrease with the presence of subgroups. Festinger, Schachter, and Back reason that subgroups are necessarily associated with the presence of mutual or reciprocated choices. Thus, the number of mutual choices constitutes a rough index of subgroup formation. They suggest a correction factor in which one-half the total number of mutual choices is subtracted from the total number of ingroup choices. They are able to demonstrate that this corrected index does produce higher correlations with certain predicted variables than does the uncorrected index, thus supporting the hypothesis that subgroup formation inhibits attractiveness to the "group as a whole."

In addition to being a possible artifact in the most typical measure of group cohesiveness, the tendency to form sociometric subgroups or cliques is of interest in its own right. Interpersonal attraction among the members of a group or subgroup is related to a large number of group variables. Thus, with an increased

sociometric subgroup formation, we should expect communication among group members to increase within subgroups, but to decrease between members of different subgroups. The total "group" might disintegrate into several warring factions. Or, to take a less extreme case, subgroups may be formed to meet the needs of a particular subgrouping of people which cannot be met by the group as a whole, although the group as a whole continues to meet some needs for all of its members. Burns (1955) reported the formation of such subgroups within a factory setting. One set of subgroups, which he called "cliques," was formed by the older men in the factory who had more or less given up any hope of promotion within the organization. They joined cliques in order to gain fellowship and reassurance from others who shared their fate. Another set of subgroups, which Burns called "cabals," were formed by the younger men in the factory. These latter subgroups apparently were used to obtain advancement within the organization and other rewards by circumventing the "legitimate" or "formal" procedures within the factory. Similarly, French (1956) found that persons with high need for affiliation chose others whom they liked as persons for future interaction, while those with high need for achievement chose those who were the best performers in the group. As Cartwright and Zander (1960) suggest, "if these had been enduring groups, they might eventually have spread into two cliques on the basis of their separate needs" (p. 88).

In general, we might expect all the factors which lead to general cohesiveness to inhibit subgroup formation. Thus, groups under common fate, under threat from an external attack, or sharing common attitudes, opinions, and values should be expected to maintain a global cohesiveness without subgroup formation. Conversely, groups which find themselves evenly divided on attitudinal or interpersonal styles should be ripe for subgroup formation (Altman and McGinnies, 1960; Haythorn *et al.*, 1956; McGinnies and Altman, 1959; Schutz, 1955, 1958). As would seem reasonable, Hare (1952) found that groups of 12 were more likely to form subgroups than those with six members—although the experimental procedure prevented the outbreak of overt, opposing actions on the part of the subgroups.

Research by Theodore M. Mills (1953, 1954) is also relevant to the general problem of subgroup formation. Mills used the word "coalition" to describe the kind of subgroups he studied. But, since we have reserved the word "coalition" for a more restrictive usage in the next section, we shall rename the phenomena he studied "support subgroups." Mills reported two studies where triads of Harvard undergraduates engaged in relatively unstructured interaction—creating TAT stories and serving in a "hypothetical military review court sitting on the case of Billy Budd." For his purposes, Mills collapsed the 12 categories of Bales's Interaction Process Analysis into three broader classifications: (1) positive reactions (Bales's categories 1, 2, and 3), (2) instrumental activity (Bales's categories 4 through 9), and (3) negative reactions (Bales's categories 10, 11 and 12). The number of acts which a person initiated in the instrumental-activity category was an index of his substantive contribution to the task, while his positive and negative interaction rates represented rough indices of his support-criticism or like-dislike.

The major finding of Mills's first study (1953) was that the two members of the triad most actively engaged in instrumental activity also exchanged a high rate of support among themselves and provided little support for the third person. Similarly, the third person provided relatively little support for the other two. According to Mills, "the findings confirm Simmel's most basic point that the threesome tends to break up into a pair and another party."

These "support subgroups" were further analyzed into four categories: (1) *solidarity*, where both parties of the subgroup tended to give each other a high rate of support, (2) *conflicting*, where both members of the subgroup tended to give each other less support than was typical, (3) *dominant*, where the most instrumentally active member of the group provided relatively little emotional support, while the second most instrumentally active member of the subgroup provided an above-average amount of support, and (4) *contending*, where the most active member provided more emotional support than was typical to his subgroup partner, while the partner provided less than was typical. The solidarity pattern was the most stable and the conflicting pattern the next most stable. Dominant and contending patterns tended to be more transient stages that eventually shifted to a conflicting pattern. "The solidarity and conflicting patterns seem to be the terminal tendencies" (Mills, 1953, p. 355). It would be interesting to know how these "support subgroups" corresponded to other kinds of subgroups. For instance, would they be related to sociometric measures of interpersonal attraction and/or the formation of coalitions as defined in the following section?

In a second study, Mills (1954) used two hired role players to create two experimental conditions. In the first condition, the *deprivation sequence*, one of the accomplices first agreed with the subject so that they formed a "support subgroup" in opposition to the second accomplice. The accomplice later shifted his opinion to match that of the other accomplice, leaving the true subject excluded from the support coalition formed by the two role players. In the second condition, the *gain sequence*, a member initially faced the two hired role players who formed a support subgroup against him. Then, in the course of the discussion, one of the role players switched his allegiance in order to form an alliance with the true subject against the other role player.

With respect to scores on the Interaction Process Analysis, subjects in the deprivation sequence who ended up as isolates acted much the same as subjects who had been isolates to begin with. Similarly, a subject in the gain condition who ended up as a member of a support subgroup behaved quite similarly to subjects who had been in the majority from the beginning of the experiment. The attitude-change and sociometric data, however, disconfirmed Mills's hypothesis that the subjects in the deprivation sequence would alienate themselves from the two role players who ended up in agreement against him. In fact, subjects who began in a majority did change their attitudes on the Billy Budd question when their support-subgroup partner deserted them for the other side. This finding may not be surprising in the light of the fact that the switching role player makes his switch after "the straight man strengthens his argument and the switcher gradually shifts his allegiance from the subject to the straight man—his skepticism melts into interest, then into agreement and finally into full support" (Mills, 1954, p. 659).

The sociometric data also failed to confirm the hypothesis that the deprivation sequence would create a completely new subgroup formation by making the true subject an isolate. The true subject in the deprivation sequence still felt that he would be chosen as a friend by the switcher, and almost half the subjects felt that they would be chosen as a future team member. Thus, the subjects did not appear to feel sociometrically excluded by the switcher. Similarly, when asked about their own sociometric preferences, 16 of 24 chose the switcher as a friend and 7 of the 24 chose him as a preferred team member.

COALITIONS

Coalitions defined

We must distinguish the word "coalition" from other words such as "subgroups" or "cliques," which are often used synonymously. The word "subgroup" is a broader term than coalition; we can have subgroups defined by patterns of interpersonal attraction, common task assignments, intertwined patterns of communication, close spatial arrangements, etc. For instance, we have called a subgroup closely intertwined by bonds of interpersonal attraction a sociometric "clique" rather than a "coalition," in spite of the fact that in everyday English usage the word "coalition" has connotations of "sticking together." According to Gamson (1964, p. 85):

A coalition situation is defined by mixed-motive, n -person games. In such games, there is an element of conflict, since there exists no outcome which maximizes the payoff to everybody. There is an element of coordination, since there exists for at least two of the players the possibility that they can do better by coordinating their resources than by acting alone A coalition is the joint use of resources to determine the outcome of a decision in a mixed-motive situation involving more than two units.

A similar definition has been offered by Thibaut and Kelley (1959, p. 205): "By coalition we mean two or more persons who act jointly to affect the outcomes of one or more other persons." It is this special kind of "subgroup" formation for which we have reserved the term coalition.

For many groups, the "rules of the game" strongly encourage the group to work jointly against a common antagonist such as the environment or another group. It is greatly to the advantage of the five members of a basketball team, for instance, to avoid fragmentation into competing individuals or subgroups. Schelling (1958) would refer to the basketball team as an example of pure coordination. Schelling's second classification is called pure conflict or zero-sum games. Such a situation would be illustrated in a five-man poker game, where the rules of the game strongly encourage individual competitive activity among the group members.

While not allowed in the official book of rules, there are obvious advantages in an "illegal" coalition in a five-man poker game. If two of the five members are able to make a covert, illegal agreement to act in consort against the other three, they are usually able to manipulate the game to their own advantage at the expense of the other three players. If we expand the "rules of the game" for poker in this manner (or if the players cheat), we have moved from a case of pure conflict to a case of a mixed-motive game (Schelling's third classification). Although each member of the potential coalition is motivated toward individual monetary gains, there may arise situations where he can achieve a greater financial return by coordinating his efforts with another in such a way as to place the other three members of the poker game at a disadvantage.

While there appears to be no empirical literature on the point, it seems reasonable that there is a high correlation among the various dimensions of subgroup formation. Groups of individuals who like each other, talk to each other, live close together, are of equal status, work on the same task, etc., should be more likely to combine their resources against a common foe when the opportunity arises. But most of the

studies on coalition formation limit the impact of these factors by working with newly formed groups which have not had the opportunity to form sociometric subgroups, communication subgroups, etc. Furthermore, most studies also require each subject to play several games with different initial resources; thus, since each subject is his own control, other variables tend to cancel out.

Theories and data on coalition formation

Formal models of coalition formation have concentrated almost entirely on the *initial distribution* of "power" or "resources" among group members. There are, as always, some exceptions. Gamson (1961b), for instance, states that a participant may have a preference for a coalition partner which is not based on that partner's control of resources. Specifically, he suggests that interpersonal attraction might affect coalitions in small committees and that ideological similarities might influence coalitions in political conventions. But it is more typical for the formal theories to deal only with initial distributions of power and for experimental settings to minimize the impact of variables other than the initial distribution of resources among the group members. We can discuss the various theoretical arguments as to why certain coalitions should be more probable than others under four major headings: (1) theories which predict the coalition with the minimum resources or the coalition which gives an individual member control over the largest number of other group members, (2) strict-rationality theories, (3) theories emphasizing variables other than distribution of initial resources, and (4) utter-confusion theory. This classification is adapted from Gamson (1964).

Minimum resources or maximal control over other group members. Caplow (1956), following some suggestions from Simmel (1902), predicted coalitions in the triad from the following four assumptions (pp. 488-489):

- I. Members of a triad may differ in strength. A stronger member can control a weaker member and will seek to do so.
- II. Each member of the triad seeks control over the others. Control over two others is preferred to control over one other. Control over one other is preferred to control over none.
- III. The strength of the coalition is equal to the strength of its two members.
- IV. The formation of coalitions takes place in an existing triad, so there is a pre-coalitional condition in every triad. Any attempt by a stronger member to coerce a weaker member in the pre-coalition condition will provoke the formation of a coalition to oppose the coercion.

Caplow must also assume that a coalition is formed only when it is desired by both potential members of a two-party coalition. How these assumptions are used to make predictions can be illustrated in Table 3 (from Caplow, 1959). For example, consider Type 1 in Table 3. If any two members form a coalition, they together will have control over the remaining member. Since no one has control without the coalition, any single member's control is increased by the formation of a coalition with another. Since players *A*, *B*, and *C* are equal in resources, either of the possible two partners should be equally acceptable as a coalition partner.

TABLE 3

EXPECTED COALITIONS IN TRIADS OF VARYING INCENTIVE CONDITIONS

Type	Distribution of power	Predicted coalitions
1	$A = B = C$	Any
2	$A > B, B = C, A < (B + C)$	BC
3	$A < B, B = C$	AB or AC
4	$A > (B + C), B = C$	None
5	$A > B > C, A < (B + C)$	BC or AC
6	$A > B > C, A > (B + C)$	None
7	$A > B > C, A = (B + C)$	AB or AC
8	$A' = (B + C), B = C$	AB or AC

Type 5 turns out to be a particularly interesting power distribution, because many of the theories discussed make competing predictions in this case. According to Caplow's assumptions, if A and C form a coalition against B , then A has control over two others: A controls B by means of the coalition; and by virtue of his greater initial resources, he also has control over C within the coalition. Similarly, B can gain control over two others in a BC coalition. Although the AB coalition gives A control of two others, this is not the case for B : B would gain control over C through the AB coalition, but he would not have control over his coalition partner, A . In contrast, if B enters into a BC coalition, he has control over the excluded member (A) as well as over his coalition partner (C). The same sort of analysis indicates that C can, at most, control only one other; thus, he does not discriminate between A and B as potential partners. Therefore, Caplow's four assumptions listed above predict no AB coalitions and an equal number of BC and AC coalitions.

In a later paper Caplow (1959) suggested two additional and different assumptions, each of which would predict a different initial preference for either the BC or the AC coalition. Since the assumptions are quite different, we shall discuss them separately. According to the first assumption (Va), "the 'chooser' in a triad seeks the maximum advantage or minimum disadvantage of strength relative to his coalition partner" (Caplow, 1959, p. 492). Thus, high-power and low-power persons seek a coalition partner with just enough additional power to win, but no more.

If the initial distribution of rewards follows Type 5 (4,3,2), it is player C who takes his choice between the possible coalitions allowed by assumptions I through IV, since only C is involved in the two possible coalitions (AC and BC). According to assumption Va, C will prefer the BC coalition, because the BC (3,2) coalition places him at a lower disadvantage within the coalition than the AC (4,2) coalition.

There is, however, another quite different principle which C might use in choosing between the BC and the AC coalitions. According to Gamson's assumption Vb, "the 'chooser' in a triad seeks to maximize the strength of the coalition in relation to the excluded member" (p. 492). According to this assumption, C wants to join in a coalition that not only provides the bare minimum resources for winning, but which assembles the maximum amount of power with which to confront the excluded player. This second assumption leads to the opposite prediction from Va: player C (the one

with the opportunity to choose) would choose the *AC* combination because it gives the greatest total amount of power in a confrontation with the excluded player. A simple count of the experiments evaluating these two assumptions which make opposite predictions reveals a strong advantage for *Va*; coalitions tend to be formed which have the minimum resources barely necessary to win.

The dilemma posed by these two competing assumptions is probably well represented in the "real world." A person might often be faced with circumstances of entering into a coalition with a high probability of winning (where his share of the spoils might be low), as opposed to entering into a "probable" winning coalition (where his share of the spoils would be large). Thus, the failure to find many instances in which subjects choose the "strong" *AC* coalition can possibly be attributed to the particular and limited set of "rules of the game" used in all the coalition studies reviewed. The "rules of the game" in these coalition experiments reinforce only those coalitions which gross a certain minimum in resources—there is no advantage to be gained in having resources in reserve above and beyond those required as a minimum.

A careful analysis indicates that the additional considerations introduced by assumption *Vb* not only make different predictions than *Va*, but also do not always make the same predictions made by assumptions I through IV. Assumption II, for instance, leads us to predict that player *B* will reject a coalition with *A* (in the 4,3,2 situation) because he would not have power over his coalition partner. If we introduce the assumption (as in *Vb*) that a coalition with large resources is more likely to win than a coalition with barely adequate resources, then *B* may choose to enter into the *AB* coalition, which is most likely to win, in preference to the *BC* coalition, in which he gains power over both his coalition partner and the excluded player.

Gamson (1961b) has elaborated and formalized a theory based on an assumption similar to Caplow's assumption *Va*. Caplow suggested that the low-power member of a winning coalition might want to minimize the power differences between himself and his coalition partner. Gamson, on the other hand, argues that "*Any participant will expect others to demand from a coalition a share of the payoff proportional to the amount of resources which they contribute to a coalition*" (Gamson, 1961b, p. 376). The Caplow "power-minimization" and the Gamson "resource-minimization" assumptions are quite similar, and both make the same predictions.

The parity norm is a "belief by the participants that a person ought to get from an agreement an amount proportional to what he brings into it" (Gamson, 1964, p. 88). Such a parity norm is quite similar to the notion of "distributive justice," which is one of Homans' (1961) five major propositions: each of two parties in a social interaction "will expect that . . . the net rewards, or profits, of each man be proportional to his investment." It is important to stress that this greater return from the candidate with four votes (in a 4,3,2 triad) is not a logical or mathematical necessity. Any two members in a 4,3,2 resource situation can combine in order to achieve the majority. In this sense, the "power" (defined in terms of the number of potential winning coalitions a player might join in) of all the candidates is *equal*, in spite of the fact that the power (defined in terms of initial resources) is highest for the person with four votes, next for the person with three votes, etc. The "minimum-resources theory" (Gamson, 1961a, 1961b, 1964) assumes that subjects will *import* a "norm of parity" into a game or experimental situation, even though there is no logical or mathematical basis for such a norm in the rules explicitly specified by the experimenter.

Evidence for the minimum-resources theory stems from three sources:

1. *Predicted coalitions.* The original version of Caplow's theory (without either assumption Va or Vb) predicts that the *BC* and the *AC* coalitions should occur with equal frequency for 4,3,2 situations. In contrast, the minimum-resources theory predicts that only coalition *BC* should occur (since coalition *BC* represents the smallest possible combination of resources necessary in order to win). The minimum-resources theory receives support from three experiments which use the 4,3,2 distribution described by situation 5 (Chertkoff, 1966; Kelley and Arrowood, 1960; Vinacke and Arkoff, 1957). All three experiments found that the *BC* coalition was most preferred in the first trial. (If the three experiments are combined, there are 54 preferences for the *BC* coalition, 20 for the *AC*, and 9 for the *AB*.)

It may be possible to write off the nine *AB* coalitions because of the subjects' misperception of the experimental instructions, previous friendships, and other "nonresource" sources of coalition formation, but the ratio of *BC* and *AC* coalitions is unexplained by either theory. It is, however, explained in a second study by Chertkoff (1967), who proposes a revision of Caplow's four original assumptions. Chertkoff analyzes the typical coalition-formation situation in which a player, after being informed of the relative distribution of resources, chooses one of the other two members of the triad as a potential coalition partner. If any of these choices is reciprocated, then a "coalition" has been formed. This is not too unlike the situation in a political convention where a candidate must seek out another candidate and propose a coalition. If the offer is accepted (that is, if a reciprocal offer is made), the coalition is formed and search behavior stops.

If we apply this argument to the 4,3,2 situation, candidate *C* (the "weak" candidate) would find a coalition with either *A* or *B* equally satisfactory. But, since he can propose only one coalition at a time, he must choose whether to propose first a coalition with *A* or *B*. Since we assume that *A* and *B* are equally attractive, we reason that on 50 percent of the occasions candidate *C* will proposition *A* and on the other 50 percent he will proposition *B*. Similarly, *A* finds coalitions with *B* and *C* equally desirable; so 50 percent of the subjects in position *A* will select *B* and 50 percent will select *C*. Candidate *B*, however, prefers a coalition with *C* over a coalition with *A*. Thus, there should never be an *AB* coalition, because *B* will never make an offer to *A*.

The probability of a *BC* coalition is determined by multiplying the probability that *B* will proposition *C* (1.0) by the probability that *C* will proposition *B* (.50); that is, a *BC* coalition should be formed on 50 percent of the trials. The probability of an *AC* coalition is determined by multiplying their respective probabilities (.5 \times .5); thus 25 percent of the triads should achieve an *AC* coalition. This leaves, of course, 25 percent of the triads achieving no coalition on the first trial. Chertkoff continues the argument:

Suppose that on 25% of the cases where no reciprocation of choice occurs, the members of the triad are allowed to choose again. In essence, this was the procedure in the Vinacke & Arkoff experiment. Then those 25% should split into .50 *B-C* coalitions and .25 *A-C* coalitions and .25 no coalitions. If this process were carried to infinity, the ratio of *B-C* to *A-C* coalitions would always remain 2:1, with the incidence of no coalitions approaching zero.

The previously summarized results (*BC* = 54, *AC* = 20, *AB* = 9) clearly correspond more closely to the predicted 2:1 ratio of *BC* to *AC* coalitions than to either the

original Caplow theory (which predicted equal frequencies) or the minimum-resources theory (which predicted no AC coalitions).

2. *Distribution of rewards.* A more direct source of data for the minimum-resources theory is derived from an analysis of how the members of a winning coalition actually divide their winnings. In general, members of winning coalitions receive a larger share of the winnings if their initial resources were higher: "the distributions seem to be generally less extreme than the differences in parity price would suggest, although there is clearly a correlation between initial resources and share of payoff" (Gamson, 1964, p. 95).

3. *Direct testimonials.* Gamson (1964), in a few verbatim transcripts taken from his 1961b study, illustrated how subjects spontaneously expressed the parity norm. Similarly, Kelley and Arrowood (1960) used a questionnaire to determine that the player with higher resources was perceived as "justified in demanding the majority share of the coalition reward, because he contributes more to the coalition."

"Strictly rational" theories of coalition formation. One theoretical tradition for coalition theory has been stimulated by the book *Theory of Games and Economic Behavior* by Von Neumann and Morgenstern, originally published in 1944 (see, for example, Luce and Raiffa, 1957). Most game theorists specify that their theories are not intended to be descriptive of actual human behavior, but rather a statement of how people (1) *ought* to behave (2) *if* they wish to achieve certain goals. But it should not be surprising that a number of psychologists have extended game theory and suggested that people will behave as they ought to, at least under certain conditions: for example, (1) the individual has full information about the payoffs involved, (2) there is time for deliberation, and (3) the payoffs are as specified and there are no extra motives or norms imported into the game. A quick overview of the mathematical literature on coalition formation is provided in Gamson (1961a), and more detailed information is available in several sources (Luce, 1954; Luce and Raiffa, 1957; Luce and Rogow, 1956; Shapley and Shubik, 1953; Shubik, 1954; and others). Thibaut and Kelley (1959) illustrate the application of game theory to a number of problems in social psychology, including coalition formation.

The primary experiment supporting the "strictly rational" position is by Kelley and Arrowood (1960). They argue (p. 232):

The weight each player receives is said to constitute his *power*, but consider this point more closely. In what sense does a player with a weight of 4 have more power than a player with a weight of 2? In the game where the three weights are 4, 2, and 1, the player with the 4 weight has power in the sense that he is able, regardless of the actions of the other two players, to induce his "environment" (the game) to give him the prize. However, in games with weights 4, 3, and 2, the player with the 4 weight can exercise this control over the environment only if the other two players fail to form a coalition. Since any pair can mobilize more weight than the remaining person, each pair has the same amount of power over the third person as does any other pair. The variability in 4's outcomes is as much under the control of the joint actions of the other two players as is the variability of either 2 or 3's outcomes In view of this logical analysis of the objective interdependency relationships among the 3 players, . . . results from the 4-3-2 and similar games are unexpected: the three players treat the weight 4

as if it does yield greater power The irony of this situation is that this erroneous belief about 4's advantage, which he usually shares, works to his disadvantage in the long run because of his exclusion from coalitions.

Why is it, then, that subjects in the 4,3,2 situation do not "realize" that the initial distribution of resources is irrelevant to power in this particular instance and continue to treat player 4 as if he had "greater power"; in other words, give him a greater share of the winnings when he does enter a coalition and combine against him in such a way as to exclude him from most coalitions? One reason may be that the subjects import the "norm of parity" into the experimental situation. In the typical coalition experiment, a coalition is not recognized by the experimenter until the two prospective partners have agreed on a split of the 100 points. The very fact that most experimenters introduce the problem of reward distribution into their experimental designs may make the parity norm salient. Or it may be that the players in the 4,3,2 situation fail to realize the unique characteristics of this particular power distribution.

Kelley and Arrowood (1960) have suggested that the tendency of the two weaker members of the triad to form a coalition against the stronger in the 4,3,2 situation reflects a "misunderstanding of the experimental situation that is not intrinsic to it, but results from the complexity of . . . [the] total procedure" (p. 232). In order to test this hypothesis, Kelley and Arrowood had subjects work in only one power distribution (4,3,2); each triad was given a lengthy set of trials, each player kept the same reward throughout, and great attention and care were devoted to ensuring that the subjects understood the "rules of the game."

Under these procedures, Kelley and Arrowood found a somewhat lower tendency for the two weaker members of the triad to combine against the stronger than had been found in previous experiments (for example, Vinacke and Arkoff, 1957). They also found evidence that the "perceived power" of player 4 decreased over trials. Kelley and Arrowood concluded that, with a simple game situation and explicit instructions, subjects may gain insight into the situation so that they behave in a manner predicted by game theory (that is, all possible coalitions are equally likely in the 4,3,2 situation).

The argument by Kelley and Arrowood seems, in general, persuasive. The *mathematics* of the 4,3,2 situation is clear—any of the possible coalitions is equally successful in producing a "win." On the other hand, the *interpersonal dynamics* involved in the typical coalition experiment are not particularly clear. It may well be that subjects import power or ascendance motives into the game situation and that they wish to "control" as many persons as possible. It is true that player 3 in the 4,3 coalition has as much control as he does in the 3,2 coalition with respect to the "win" administered by the experimenter. But the 3,2 coalition may be more satisfying than the 4,3 for reasons which have nothing to do with the formal rules of the game.

Similarly, players may import a general parity norm into the specific 4,3,2 situation and feel that the high-resource player "ought" to receive a greater distribution of the rewards—even if the general ecological conditions which give rise to this norm are not relevant in this particular one-hour psychological experiment. Nevertheless, it seems reasonable that players will behave similarly to the game-theory predictions if the value of the "win" administered by the experimenter is made large enough to overshadow other motives and norms imported into the game, and if the players are intelligent enough or have enough experience with the 4,3,2 sit-

uation that they understand the mathematical irrelevance of the initial power distributions. The preceding analysis is a special case of a more general argument made by Gamson (1964), that, given the right set of circumstances, the results predicted by any of the theoretical positions discussed in this chapter can be produced in the laboratory.

It would appear, however, that those circumstances facilitating the "strict-rationality" theory have not often been achieved in experiments on coalition formation to this date. For instance, Vinacke *et al.* (1966) tried to increase their subjects' "understanding" of the game situation with a set of instructions. The last two sentences are typical of the entire communication and are quoted here: "To repeat, then, according to one principle, it makes no difference who enters into a coalition, since any pair can win the prize. According to the other principle, the two weaker players try to defeat the stronger man by forming an alliance against him" (p. 183).

The Kelley and Arrowood hypothesis is confirmed to a very limited extent. The introduction of the information did result in a greater number of coalitions including player 4 for males (but not for females) when all three members of the triad were given the information (but not when only two or one was given the extra information). But, even in the condition where there was a significant "learning" effect (that is, player 4 was included in more triads), he was still excluded in 47 percent of the triads; chance would predict that he should be excluded in only 33 percent.

Vinacke *et al.* (1966) report that their "information" manipulation produced a side effect—it increased the percentage of subjects who checked the alternative "I tried to win." Further internal analyses suggest that it is this "desire to win" which is associated with "strictly rational" coalition formations. The amount of "understanding," on the other hand, was not associated with the formation of "strictly rational" coalitions.

While these data may cast some doubt on one specific hypothesis from Kelley and Arrowood—that the complexity of the total procedure produced a state of confusion which made "strictly rational" behavior unlikely—the data are supportive of the more general hypothesis. There are limits to the Caplow-Gamson hypothesis that the weak members of a triad will form a coalition against the stronger; and there are some situations where the equal percentage of all possible coalitions predicted by game theory can be observed.

There remains one further criticism of the specific procedure used by Kelley and Arrowood. Since only one reward distribution was used (4,3,2) and the player kept his distribution throughout the entire series of trials, the subjects may have become aware of the "cumulative" winnings of each member—a fact which could distract them from the experimenter's instructions to play each game independently. When "each player's acquired points are accumulated so that each can assess his success relative to the other two . . . there is a significant tendency for alliances to occur between the two players who are behind at the time—and this tendency reduces the incidence of coalition between the weaker players (indeed, it approximates closely the findings of Kelley & Arrowood)" (Vinacke, 1962; cited in Vinacke *et al.*, 1966, p. 182)

Theories stressing variables not simply related to the initial distribution of resources. Although we are not able to cite data, it seems likely that subgroups identified on the basis of sociometric choice are more likely to form coalitions. There are at least two sets of

data illustrating the impact of other variables on coalition formation (1) sex and personality differences in coalition strategies reported by Vinacke and his colleagues (Amidjaja and Vinacke, 1965; Bond and Vinacke, 1961; Chaney and Vinacke, 1960; Uesugi and Vinacke, 1963; Vinacke, 1959), and (2) a modification of the "rules of the game" by Kelley and Arrowood (1960) and Chertkoff (1966).

In commenting on the different strategies of coalition formation between male and female triads, Uesugi and Vinacke (1963, p. 78) and his associates have commented:

It soon became apparent that this [standard] game-situation [with females] evoked a strategy different from that typical of the male groups. The men had gratifyingly manifested the sort of behavior that the (male) experimenters had expected. Thus, they seem to enter with gusto into the game, bargaining competitively, making the best "deals" they could, and, in short, striving to win. The behavior of the females was puzzlingly different. For them, the situation appeared to provide an opportunity for social interaction The women did not see the objective to be a matter of winning, so much as a problem of arranging a "fair" outcome, one that would be satisfactory to all three players.

There are several features which typify this "accommodative" strategy: offers to form three-person coalitions, failure to form any coalitions at all, division of the prize equally in pair alliances, tendency to ally in the "all powerful" patterns (when no coalition is necessary to win), relatively little bargaining in the two most competitive game situations, and initiation of altruistic offers, "when one player suggested that another two form a coalition to her disadvantage" (Uesugi and Vinacke, 1963, p. 79).

In two experiments (Amidjaja and Vinacke, 1965, Chaney and Vinacke, 1960), Vinacke has investigated the impact of certain personality variables which might account for the differences in male and female strategies. For males (but not for females) subjects high in achievement play an active, initiating role; those high in nurturance, a less active, recipient role.

In an interesting elaboration of the observed differences in strategies between male and female players, Bond and Vinacke (1961) studied the coalition behavior in mixed-sex coalitions, that is, either two women and one man or vice versa. They report that there was some tendency for the two men to ally against the one woman and for the two women to ally against the one man—further documenting the presence of additional, nonresource variables in coalition experiments. When one female faces two men, females tend to form an alliance with a male, even though this may not be necessary to win; when a lone male possesses the resources to win over the combined resource of the two women, however, he refuses to make an "unnecessary" alliance. Female players do significantly better than male players when faced with two players of the opposite sex.

Uesugi and Vinacke (1963) constructed a measure of accommodative versus exploitative strategies based on the six points discussed earlier. When they used a game specifically designed to be interesting to females, females evidenced an even greater degree of "accommodative" behavior than they had in the previously used board games. Male subjects did not, however, differ between the standard board game and the specially designed task.

A study by Vinacke and Gullickson (1964) sheds light on the developmental aspects of the accommodative and exploitative strategies. Both males and females were studied at ages 7 and 8, ages 14 and 16, and as college undergraduates. Female triads indicated about the same amount of accommodative strategy at the three age levels. But males showed increasing exploitative strategy with age. The youngest males and all females had low amounts of exploitative strategy; 8-year-old males were slightly higher, and college students showed the highest degree of exploitative strategy.

Chertkoff (1966) and Kelley and Arrowood (1960) illustrate how coalition behaviors can be changed when initial resources formally defined by "rules of the game" are made somewhat more complex. The formal theories (Caplow, 1956, 1959; Gamson, 1961b) make provisions for only the simplest kinds of initial resources. In contrast, Chertkoff (1966) had subjects participate in a series of simulated political conventions. The power among the various candidates was distributed as specified in Type 5 in Table 3: candidate *A* had 40 votes, candidate *B* had 30 votes, and candidate *C* had 20. As is always the case in Type 5, any possible combination of candidates is sufficient to produce the winning 46 votes.

Chertkoff introduced an additional characteristic for each player—the probability that the player would win the subsequent election *if* nominated. While candidates *B* and *C* (the candidates found most likely to form a coalition in earlier studies—for example, Vinacke and Arkoff, 1957) each had a 50 percent chance of winning, candidate *A* (the one with 40 votes) was described by *B* as having either a 50, a 70, or a 90 percent chance of winning the subsequent election, depending on the experimental condition.

The most relevant data are gathered from the coalition preferences of candidate *C*, the candidate in a position to choose between the two likely *AC* and *BC* coalitions. Replicating previous studies, *C* is most likely to choose *B* when the number of convention votes is the only factor involved, that is, when no mention is made about probability of winning an election. In this "control" condition similar to other coalition-formation studies, only 7 of 25 subjects chose candidate *A*. But as *A*'s probability of winning the election increases, so does the tendency for a person in *C*'s position to choose *A* as a coalition member. When *A*'s chances were 90 percent, 17 of the 25 subjects chose him as a coalition partner.

In a second experiment not previously discussed, Kelley and Arrowood (1960) gave subjects "real" power differences by providing them with different levels of outcome if no coalition were reached at all. Presumably, this placed the subjects in a position of being able to threaten to avoid all coalitions and to collect the payoff assigned to them even if no coalition were formed. Such a change in the "rules of the game" encourages a player with a worthwhile alternative to demand a greater share of the coalition winnings. Under these instructions, in contrast to their findings with the standard instructions, "the weakest member in the triad has a definite advantage, being sure to be included in whatever coalition is formed."

Gamson (1964), who subsumes most of the experiments discussed in this section under the title "Anti-Competitive Theory," argues that subjects will tend to choose those coalitions which minimize the issues of competition and bargaining. "This path of least resistance will be between those partners for whom there exists the most obvious and unambiguous solution to the problem of dividing the relative share of the payoff. This will occur among players who are equal in resources, be-

cause according to either the parity norm or the pivotal power principle, players with equal resources will share equally" (p. 91). Some support for this derivation is provided by Willis (1962) and Gamson (1961a).

In the analysis of coalition formation, other nonutilitarian bases for coalitions must also be considered. Results from experiments by Hoffman, Festinger, and Lawrence (1954) suggest that a coalition in a triadic power distribution of Type 2 [$A > B$, $B = C$, $A < (B + C)$] will be less likely to occur if A is seen as a superior person, so that B and C cease comparing themselves with him. In that case, B and C might compete with one another in forming a coalition with A .

Random-choice or "utter-confusion" theories of coalition formation The kind of high-powered thinking required to achieve the "optimal" coalition even in the simple triadic experiments may lead many subjects to respond randomly or out of confusion. It would be possible to argue that many social dilemmas are solved by some form of coin flipping, rule of thumb, or haphazard decision processes. The degree to which the previously discussed theories predict coalition patterns should be qualified by the fact that a random-choice or utter-confusion model would make the same predictions in many cases. For instance, in the frequently discussed 4,3,2 coalition pattern, where the strictly rational theory predicts an equal percentage of each of the three kinds of coalitions, the same outcome would be predicted by a random-choice process. Indeed, Gamson (1964) is able to cite evidence from some experiments which suggests that subjects appear to form coalitions randomly—although there have been no experiments intended as a direct test of the random-choice or utter-confusion theories.

In summary, there is evidence that, if the appropriate conditions are established, each or all of the above theoretical processes can determine coalition formation.

COMMUNICATION

As was the case with attraction and cohesiveness, communication patterns are bound up in a complex syndrome of variables each of which is sometimes a cause, sometimes an effect, and often both. With some justification from tradition, this section focuses on the impact of certain communication channels on other variables. Although some investigators have treated the openness of a communication channel as a continuous variable (for example, Mackenzie, 1966a, 1966b; Thibaut and Kelley, 1959), the most typical of the studies reviewed below deal with the simple dichotomous variable: either a communication channel is open or it is not. A geographical separation among authors on a handbook volume, a personal tiff between husband and mother-in-law, and formal procedures laid down in the table of bureaucratic organization illustrate how communication channels can be open or closed between two persons.

Bavelas (1950) originally defined the problem as follows:

Imposed patterns of communication may determine certain aspects of group processes. This raises the question of how a fixed communication pattern may affect the work life of a group. Do certain patterns have structural properties which may limit the group performance? May it be that among several communication patterns—all logically adequate for the successful completion of a specified task—one will result in significantly better performance than another?

What effects might pattern, as such, have upon the emergence of leadership, the disruption of organization, and the degree of resistance to group disruption?

With these questions and with the experimental procedures to be described below, Bavelas stimulated a long series of studies on communication patterns. In 1948 he published "A Mathematical Model for Group Structures," in which he elaborated a detailed mathematical theory of group structure. In 1950 he published a laboratory procedure for analyzing some of the questions posed in the earlier paper. Using data gathered from an unpublished paper by Sidney Smuth and from Leavitt's 1949 dissertation (published in 1951), Bavelas presented a simple and highly appealing laboratory procedure which has since become one of the main tools for the study of social communication. There has even been a computer simulation of various networks (McWhinney, 1964).

In the original Leavitt experiment, subjects were seated around a circular table separated by vertical partitions. Slots, which could be opened or closed by the experimenter, allowed the subject to pass messages to certain other members of the group. The various kinds of communication patterns which have been used are illustrated in the schematic diagrams presented in Fig. 6. The nets actually used by Leavitt (1951) were the five-person Circle, Chain, Y, and Wheel.

From a set of six symbols (a circle, triangle, diamond, square, plus sign, and asterisk), each subject was given a list of five symbols. The lists were constructed in such a manner that there was only one symbol which appeared in all five lists. The problem set for the group (the group task) was to discover the common symbol and to get this information to every member of the group. A trial was not scored as a success unless every group member indicated the correct answer.

While a number of different tasks have been used in the subsequent research, nearly all share the important characteristics of the Bavelas-Leavitt task. All members of the group are necessary—both in the sense that each and every group member possesses information without which the task cannot be solved, and in the sense that each and every member of the group must know and agree with the correct answer.

In contrast to the relatively complex Lewinian theory of the early Bavelas (1948) paper, the later Bavelas (1950) and Leavitt (1951) papers are organized around a number of simpler theoretical notions specifically related to the particular "communication-net" experimental paradigm. *Distance* and *centrality*, for instance, introduced by Bavelas (1948) and Leavitt (1951), are still the major organizing concepts for research on communication nets. Leavitt (1951, p. 38) defined distance and centrality:

Thus, one way in which communication patterns vary can be described by the sum of neighbors that each individual member has, neighbors being defined as individuals to whom a member has communicative access. So, too, the concept of *centrality*, as defined by Bavelas, is of value in describing differences within and between structures. The most central position in the pattern is the position closest to all other positions. Distance is measured by the number of communicative links which must be utilized to get, by the shortest route, from one position to another.

Some of the mathematical indices which have been used to measure centrality and related concepts have been reviewed by Shaw (1964, pp. 114–117) and some new ones have been proposed by Mackenzie (1966a, 1966b).

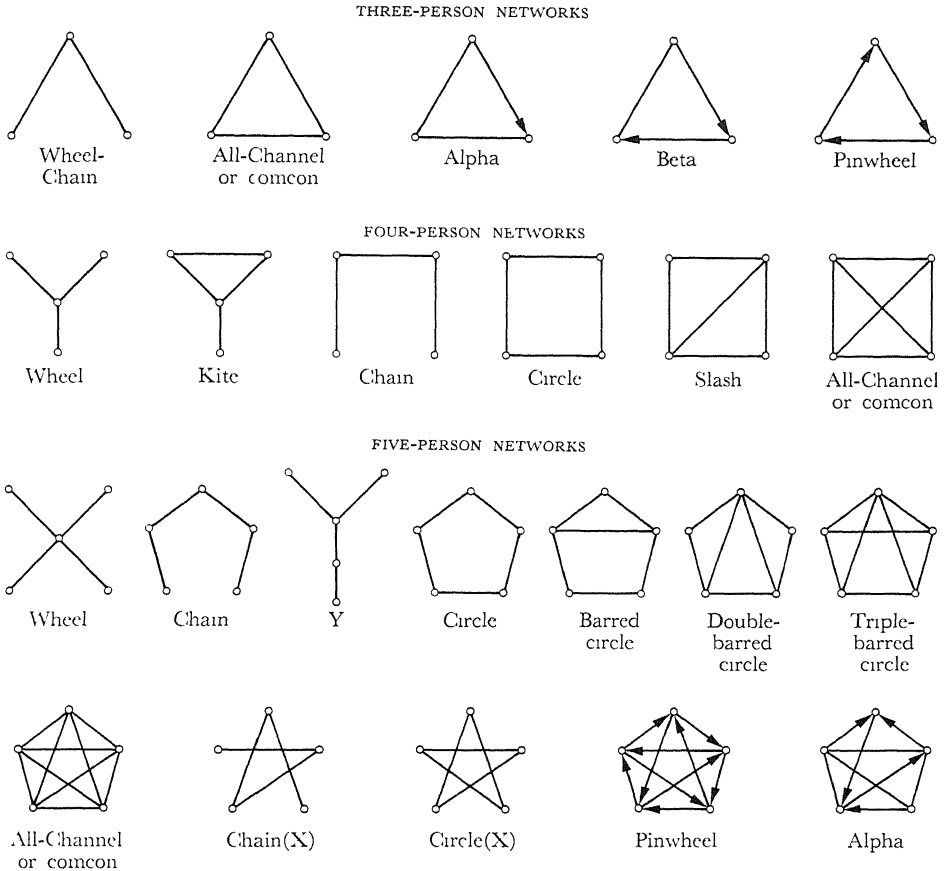


Fig. 6. Communication networks used in experimental investigations. Dots represent positions, lines represent communication channels, and arrows indicate one-way channels. (From Shaw, 1964.)

Differences among Leavitt's patterns

Leavitt divides his discussion into two main parts: (1) an analysis of overall differences among networks and (2) an analysis of different positions within a single network. Although a wide variety of particular operational procedures (that is, specific procedures for transmitting information, obtaining the correct answer, and communicating the correct answer to all members of the group) are possible in each of the nets, Leavitt reports that most of the groups in a particular network adopted pretty much the same operational procedure. All five of Leavitt's Wheel groups organized themselves into a pattern in which the peripheral group members sent their information into the central member. The central member then solved the problem and transmitted the message back to the peripheral members.

Largely the same organization developed in the Y and Chain networks. The most peripheral members sent their information to the most central member, who solved the problem and then passed the answer back. The additional complication in the Y and Chain networks is, of course, that the central member was not able to communicate directly with all peripheral members. Thus, some of the intermediate positions must "relay" initial information to the most central member and "relay" the answer back to the peripheral members. Only the Circle failed to show a consistent operational procedure. "Most commonly, messages were just sent in both directions until any S received an answer or worked one out. In every case, all available links were used at some time during the course of each trial" (Leavitt, 1951, p. 42).

In the second part of his analysis, Leavitt examined differences among different nets on a number of performance characteristics (dependent variables), including the amount of time taken on correct trials, the number of messages, the number of errors, leadership nominations, and satisfaction with the job in the group. By and large, the groups ranked in the same order for each dependent variable: Circle, Chain, Y, Wheel—from the least to the most centralized. The Circle, or most decentralized, is active, leaderless, unorganized, erratic, and yet is enjoyed by its members. The Wheel, at the centralized end of the continuum, is less active, has a distinct leader, is well and stably organized, is less erratic, and yet is unsatisfying to most of its members.

An analysis of differences among positions within a single net is consistent with the above observations. The most central person receives the most messages, and persons in centralized positions report greater job satisfaction and higher morale.

The original Bavelas papers and the Leavitt experiment have been followed by a large number of studies using the communication-net paradigm. The research has been discussed in an appropriately critical review by Glanzer and Glaser (1961, p. 13: "The area has been worked not only exhaustively, but to exhaustion. After a promising start, the approach has led to many conflicting results that resist any neat order"). In another review, Marvin E. Shaw (1964), one of the most prolific contributors to the communication-net literature, has attempted to find order among the chaos. In light of these recent reviews, we shall attempt no comprehensive review of this literature in this chapter. We will, however, indicate a few of the independent and dependent variables which have been studied, discussing along the way some of the theoretical concepts emerging from studies using the Bavelas-Leavitt paradigms.

Independent variables

Pattern of communication channels. As the various networks illustrated in Fig. 6 indicate, the number of communication networks in five-person groups has been expanded from the four used in the Leavitt study. A rank of centralized to decentralized networks, however, still orders most dependent variables. Although these formal structural properties of the various communication nets may well prove to be the least interesting data in the communication-net literature, we have reproduced the summary tables from Glanzer and Glaser (1961) and brought them up to date for this volume (Tables 4 and 5).

Group size. An interesting problem (and one which is particularly relevant to a study by Shaw, 1954b) involved in the comparison of networks of different sizes is raised by Glanzer and Glaser (1961, p. 9).

Could not the four-man "Wheel" also be called a "Y"? . . . There is no empirical or rational basis for matching results from a four-man and five-man "Wheel." The only thing clear is that the number of distinct patterns decreases as the number of group members decreases. Therefore, although Chain, Wheel, and Y are distinct patterns for five-man groups, when the number of members is reduced by eliminating a peripheral member, only two of these three patterns remain: four-man Chain and Wheel-Y. If the number of members is reduced again, the two remaining networks coalesce into the simple three-man Chain.

Leavitt (1951) reports that his five-man Wheel network had a lower average time on correct trials than the five-man Circle. But for Shaw's (1954c) four-man groups, the results were exactly the opposite—Circles were somewhat faster than Wheels.

TABLE 4

SUMMARY OF RESEARCH ON THE FORMAL STRUCTURAL PROPERTIES
OF VARIOUS COMMUNICATION NETWORKS (FROM GLANZER AND GLASER, 1961)

<i>Investigator</i>	<i>Task</i>	<i>Network</i>	<i>Independent variable</i>	<i>Dependent variable</i>	<i>Findings*</i>
Bavelas (Smith) (1950)	Determining common symbol	Chain, Circle (5-man)	Network Position centrality	Accuracy Leader nomination	$N \rightarrow a$ $Ch > Cc$ $PC \rightarrow ln$ +
Leavitt (1951)	Determining common symbol	Chain, Circle, Wheel, Y (5-man)	Network Position centrality	Speed Accuracy Leader nomination Morale Number of messages	$N \rightarrow s$: 0† $N \rightarrow a$ $Y > Cc$ $N \rightarrow nm$. $Ch, Wl, Y < Cc$ $PC \rightarrow ln$: + $PC \rightarrow mr$. + $PC \rightarrow nm$: +
Heise and Miller (1951)	Reconstruction of word lists, sentences, anagrams	Chain, one-way and two-way channel Circles (3-man)	Network Noise Task Network \times noise \times task interaction	Speed Accuracy Number of words	$N \rightarrow s$: + $N \rightarrow nw$ + $Ns \rightarrow s$ - $Ns \rightarrow a$ - $Ns \rightarrow nw$ + $N \times Ns \times T \rightarrow s, a, nw$ +
Guetzkow and Simon (1955)	Determining common symbol	All-Channel, Circle, Wheel (5-man)	Network	Speed Organizational stability Message content	$N \rightarrow s$ $Wl > ACI > Cc$ $N \rightarrow ost$. $Wl > Cc > ACI$

(Continued)

* The abbreviations in the *Findings* column of this and the following synoptic table are derived from the independent variable and the dependent variable. They read as follows: $N \rightarrow s$ + = network (independent variable) has an effect on speed (dependent variable), $PA \rightarrow m$ 0 = position autonomy does not have an effect on morale. If the independent variable is at least an ordinal measure, then the symbol + takes on added meaning, signifying the direction of the relationship. In these cases $Ns \rightarrow nw$ + = noise level is positively related to the number of words transmitted; $Ns \rightarrow s$ - = noise level is negatively related to speed. If the independent variable is a nominal measure, then the findings are abbreviated as follows: $N \rightarrow s$ $Wl > ACI > Cc$ = network affects speed, with Wheel faster than All-Channel which is faster than Circle. Inequalities in such findings are always given with the superior groups on the left. Thus, $N \rightarrow a$ $Y > Cc$ = network affects accuracy, with Y better than Circle, but $N \rightarrow nm$ $Wl, Y, Ch < Cc$ = network affects number of messages, with Wheel, Y, and Chain better (requiring fewer messages) than Circle.

† The interpretation of the finding does not agree with the investigator's

TABLE 4 (Continued)

<i>Investigator</i>	<i>Task</i>	<i>Network</i>	<i>Independent variable</i>	<i>Dependent variable</i>	<i>Findings</i>
Luetzow and Hill (1957)	Determining common symbol	All-Channel, Circle (5-man)	Network Communication restriction during intertrial organizing period Circle versus Circle-All-Channel	Speed Message content	ComR → s: 0
Goldberg (1955)	Group decision on number of dots	Chain, Wheel, Y (5-man)	Network Position centrality	Influenceability Leader nomination	PC → infl 0 PC → ln +
Grow (1957)	Modified common-symbol problem	Simulated Chain (3-man)	Position autonomy Position centrality Need for autonomy	Morale Status	PA → m + PA → st 0 PC → m 0 PC → st +
Christie (1954), also in Christie, Luce, and Macy (1952)	Reconstruction of number list	All-Channel, Chain, Circle, Pinwheel (5-man)	Network Trials learning	Amount of learning Number acts to solution	N → al Cc, Ch > Pw, ACI
Macy, Christie, and Luce (1953), also in Christie, Luce, and Macy (1952)	Determining common ambiguous marble	Chain, Circle, Pinwheel, Wheel (5-man)	Network Additional feedback in Wheel	Accuracy	N → a Cc > Wl, Ch, Pw
Shaw (1954c)	Arithmetic problems	Circle, Slash, Wheel (4-man)	Distribution of information: equal versus unequal Network Position centrality Position information (high versus low information at a given position)	Speed Accuracy Number of messages Leader nomination Morale	DI → s 0 DI → a Unq > Eq DI → nm 0 DI → ln 0 DI → mr 0 N → s 0 N → a 0 N → nm Wl < Cc < Sl N → mr Cc, Sl > Wl PC → s + PC → nm + PC → ln + PC → mr + PI → s + PI → nm + PI → ln 0 PI → mr 0
Gilchrist, Shaw, and Walker (1954)	Arithmetic problems	Wheel (4-man)	Distribution of information: equal versus unequal peripheral versus unequal central Position centrality Position information	Speed Accuracy Number of messages Leader nomination Morale	DI → s 0 DI → a 0 DI → nm 0 PC → s + PC → a 0 PC → nm + PC → ln + PC → mr + PI → s + PI → ln 0 PI → mr +

TABLE 4 (Continued)

<i>Investigator</i>	<i>Task</i>	<i>Network</i>	<i>Independent variable</i>	<i>Dependent variable</i>	<i>Findings</i>
Shaw (1956)	Arithmetic problems	All-Channel, Wheel (4-man)	Distribution of information systematic versus random Knowledge of information distribution Network Problem difficulty	Speed Accuracy Number of messages Morale	DI \rightarrow s Sys > Rdm DI \rightarrow nm: 0 DI \rightarrow mr Sys > Rdm KID \rightarrow s 0 KID \rightarrow nm 0 KID \rightarrow mr 0 N \rightarrow s 0 N \rightarrow nm: Wl < ACI N \rightarrow mr ACI > Wl
Shaw (1954b)	Common-letter (simple) and arithmetic (complex) problems	Circle, Wheel (3-man)	Problem complexity \times network interaction Network Problem complexity	Speed Accuracy Number of messages	Comp \times N \rightarrow s 0 Comp \times N \rightarrow a 0 Comp \times N \rightarrow nm 0
Shaw (1958)	Arithmetic problems	All-Channel, Wheel (4-man)	Network Irrelevant problem information Networks \times irrelevant information interaction	Speed Number of messages Morale	N \rightarrow s ACI > Wl N \rightarrow nm Wl < ACI N \rightarrow mr: ACI > Wl II \rightarrow s - II \rightarrow nm 0 II \rightarrow mr: 0 N \times II \rightarrow s. 0 N \times II \rightarrow nm + N \times II \rightarrow mr 0
Shaw (1955)	Arithmetic problems	All-Channel, Kite, Wheel (4-man)	Leadership style: autocratic versus democratic Network Position centrality Position centrality \times leadership style interaction	Speed Accuracy Number of messages Morale	LS \rightarrow s Auto > Demo LS \rightarrow a Auto > Demo LS \rightarrow nm Auto < Demo LS \rightarrow mr: Demo > Auto N \rightarrow s 0 N \rightarrow a: 0 N \rightarrow nm Wl < Kt < ACI N \rightarrow mr ACI > Kt > Wl PC \times LS \rightarrow s 0 PC \times LS \rightarrow nm 0 PC \times LS \rightarrow mr 0
Shaw and Rothschild (1956)	Arithmetic problems	All-Channel, Slash, Wheel (4-man)	Trials learning Network Position centrality	Speed Number of messages Morale Organizational structure	T \rightarrow s: + T \rightarrow nm - T \rightarrow mr: + N \rightarrow s ACI > Wl, SI N \rightarrow nm: Wl < ACI < SI N \rightarrow mr: 0
Shaw, Rothschild, and Strickland (1957)	Group decisions about "human relations" problems	All-Channel, Slash, Wheel (4-man)	Network Position centrality	Speed Number of messages Morale	N \rightarrow s. ACI > SI > Wl N \rightarrow nm: 0 N \rightarrow mr 0 PC \rightarrow s 0 PC \rightarrow nm + PC \rightarrow mr 0
	Estimation of number of clicks	Wheel (4-man)	Position centrality Support versus opposition from other members	Influenceability	PC \rightarrow infl 0

TABLE 5

SUMMARY OF RESEARCH ON THE FORMAL STRUCTURAL PROPERTIES
OF VARIOUS COMMUNICATION NETWORKS, 1961-1966

<i>Investigator</i>	<i>Task</i>	<i>Network</i>	<i>Independent variable</i>	<i>Dependent variable</i>	<i>Findings</i>
chein (1958)	Determining common digit	All-Channel (4-man)	Leader: present or absent Group style: cooperative versus competitive	Number of steps (messages) Organization Morale	GS \rightarrow ns coop < comp GS \rightarrow org coop > comp GS \rightarrow mr coop > comp
fulder (1960)	Arithmetic problems	Circle, Wheel (4-man)	Network Practice periods	Speed Accuracy Number of messages	N \times PP \rightarrow s Cc > Wl in early practice, Wl > Cc in late practice N \times PP \rightarrow a Cc > Wl in early practice, Wl > Cc in late practice N \times PP \rightarrow nm Cc < Wl in early practice, Wl < Cc in late practice In late practice N \rightarrow a Wl > Cc N \rightarrow nm Wl < Cc
Lawson (1964a)	Determining common symbol	All-Channel, Circle, Wheel (4-man)	Network Reinforcement	Speed Number of messages Accuracy Morale	For nonreinforced groups N \rightarrow s. ACI, Wl > Cc N \rightarrow nm Wl < ACI, Cc N \rightarrow a Wl > ACI N \rightarrow mr Cc > ACI For Circle groups only R \rightarrow s' +
Lawson (1964b)	Arithmetic problems	All-Channel, Circle, Wheel (4-man)	Reinforcement	Speed Number of messages Accuracy Morale	For All-Channel groups only R \rightarrow s' + R \rightarrow nm: - For Circle groups only R \rightarrow mr' -
Lawson (1965)	Arithmetic problems	All-Channel, Wheel (4-man)	Network Change in network on successive days Wl-Wl-Wl-Wl, Wl-ACI-Wl-Wl, Wl-Wl-ACI-Wl, ACI-ACI-ACI-ACI, ACI-Wl-ACI-ACI, ACI-ACI-Wl-ACI	Speed Number of message cards Number of messages Accuracy Morale	For Wl-Wl-Wl-Wl and ACI-ACI-ACI-ACI only N \rightarrow s ACI > Wl N \rightarrow nmc. Wl < ACI Using above group and control for shifted groups on day 3 CN \rightarrow s Wl-Wl-Wl-Wl > Wl-ACI-Wl-Wl, ACI-ACI-ACI-ACI > Wl-ACI-Wl-Wl on day 2, ACI-ACI-ACI-ACI > Wl-Wl-ACI-Wl on day 3 CN \rightarrow nmc similar to above

TABLE 5 (Continued)

Investigator	Task	Network	Independent variable	Dependent variable	Findings
Cohen, Bennis, and Wolkon (1961)	Determining common symbol	Circle, Wheel (5-man)	Network Trials	Speed Number of messages Changes of answers Accuracy Morale Leader nomination Organization stability	$N \rightarrow s$ $Wl > Cc$ $N \rightarrow nm$ $Wl < Cc$ $N \rightarrow ca$ $Wl < Cc$ $N \rightarrow a$ $Wl > Cc$ $N \rightarrow ln$ $Wl > Cc$ $N \rightarrow ost$ $Wl > Cc$ $T \rightarrow s$ + $T \rightarrow nm$ - $T \rightarrow ca$ - $N \times T \rightarrow s$: Wl steeper increase over trials than Cc $N \times T \rightarrow nm$ Wl steeper decrease over trials than Cc $N \times T \rightarrow ca$ Wl steeper decrease over trials than Cc
Cohen, Bennis, and Wolkon (1962)	Determining common symbol	Circle, Wheel (5-man)	Change in network for last 30 of 60 problems $Cc-Cc$, $Wl-Cc$, $Wl-Wl$, $Cc-Wl$	Speed Accuracy Morale Organization stability	For last 15 problems $CN \rightarrow s$: $Wl-Cc > Cc-Cc$ $CN \rightarrow a$: $Wl-Cc > Cc-Cc$ $CN \rightarrow ost$ $Wl-Cc > Cc-Cc$ For last 30 problems $CN \rightarrow mr$ $Wl-Cc > Cc-Cc$, $Wl-Wl > Cc-Wl$
Cohen and Bennis (1961), used nonelective $Wl-Cc$ data from above study	Determining common symbol	Wheel for 30 problems and Circle for last 30 problems (5-man)	Election of leader after 15 problems	Leader continuity	$EL \rightarrow lc$. Elective $Wl-Cc >$ nonelective $Wl-Cc$
Cohen and Bennis (1962)	Determining common symbol	All-Channel, Wheel (5-man)	Change in network $ACI-ACI$, $Wl-ACI$	Organization stability	$CN \rightarrow ost$ $Wl-ACI > ACI-ACI$
Shelly and Gilchrist (1958)	Arithmetic problems	All-Channel, Wheel (4-man)	Network Number of items per trial (total number of items held constant over all trials by giving different number of trials)	Speed on first trial Speed over all trials Number of messages on first trial Number of messages over all trials Morale	$N \rightarrow nm(all)$ $Wl < ACI$ $NI \rightarrow s(lst)$ - $NI \rightarrow s(all)$ - $NI \rightarrow nm(lst)$ + $NI \rightarrow nm(all)$ + $NI \rightarrow mr$ -
Morrisette, Switzer, and Crannell (1965)	Determining frequency of symbol	Circle, Wheel (4- and 5-man)	Network Size of group Difficulty of task	Speed Accuracy	$N \rightarrow s$ $Wl > Cc$ $N \rightarrow a$ $Wl > Cc$ $DT \rightarrow s$ - For easy task only $N \times SG \rightarrow s$ $4Cc > 5Cc$, $4Wl = 5Wl$
Morrisette (1966), used 4-man data from above study	Determining frequency of symbol	Circle, Wheel (3- and 4-man)	Network Size of group Difficulty of task	Speed Accuracy	$N \rightarrow s$: $Wl > Cc$ $N \rightarrow a$: $Wl > Cc$ $SG \rightarrow s$ - $DT \rightarrow s$ -

Glanzer and Glaser (1961, p. 12) stressed two points about Shaw's attempt at reconciliation. First, groups in the "reconciling" study are

... three-man groups, not five-man groups, as in the Leavitt study, and not four-man groups, as in the other Shaw study Why is the [first] pattern in Figure [6] called a "Wheel" rather than a "Chain"? . . . It seems unlikely that differences in the results of a study of five-man groups and a study of four-man groups can be resolved by a study of three-man groups. Resolution is especially unlikely since the Chain, which, according to Leavitt, tends to be slower than the Circle, and the Wheel, which tends to be faster than the Circle, reduce to a single network in the three-man group. Shaw identifies this network with the fast Wheel. It could just as well be identified with the slow Chain.

In rebuttal, Shaw (1964, p. 114) states:

Glanzer & Glaser (1961) . . . apparently can see no difference between the three-person Wheel and the larger Chains. Actually, there is a good reason to label it "Wheel" and compare it with larger Wheels rather than Chains. The essential characteristic of a Wheel network is that one person communicates with all others, whereas all other members communicate only with this central person.

While Shaw undoubtedly has a point, that there are some important similarities between the three-person "Wheel-chain" and four- and five-person *Wheels*, it is equally possible to find reasons why the three-person "Wheel-chain" should be compared with larger *Chains*. To take just one example, it might be argued that the essential feature of a Chain is that a person on one end must transmit his messages through all other persons in the net in order to communicate with the person at the other end of the Chain. If this characteristic of the three-person Chain is regarded as "crucial," then the three-person "Wheel-chain" should be most comparable to larger Chain networks rather than larger Wheel networks. At the least, it is clear that the concept of "group size" is not a simple unidimensional variable in communication-net studies. Adding an additional member to a group in a communication-net study probably makes qualitative differences in the nature of the group structure as well as a simple quantitative increase in the number of group members. For example, as Shaw (1964, p. 129) has pointed out:

Walker in a 1954 unpublished dissertation at the University of Wisconsin compared three-, four-, and five-person Wheel networks with comcon [All-Channel] networks of the same size. Arithmetic problems were assigned as group tasks. The results showed that as size increased: (a) group efficiency, as measured by problem solution times and errors, decreased; (b) group morale, as measured by ratings of satisfaction by members' sociometric rejections of their own positions, decreased; (c) number of messages increased; and (d) unanimous selection of leader decreased. Efficiency, satisfaction, and messages transmitted tend to be higher in comcon than in the Wheel, but there was no significant interaction between network and group size.

(The term *comcon*, an abbreviation of "completely connected," was coined by Shaw, 1954b, to refer to All-Channel networks in which each position can communicate with any other.) As further evidence for a lack of interaction between size and design of a communication net, Shaw notes that the rank-ordering of groups in Lawson's (1964a) four-person networks was similar to that reported by Leavitt (1951) for five-person networks working on the same task. It was also similar to the rank order reported by Shaw (1954c) for three-person networks working on Leavitt's similar identification task.

Morrisette, Switzer, and Crannell (1965) compared four- and five-man groups in Circle and Wheel nets. In the overall analysis, the only significant effects indicated better performance with the easy task and better performance in the (centralized) Wheel than in the Circle. There was no overall effect for group size, nor any interactions among size, task, and structure. In a series of further analyses of variance (essentially *t* tests among individual means, even though the overall *F* was not significant), the authors found that the four-man group was significantly faster than the five-man group only for Circle nets with an easy task. For the other three possible comparisons (Wheel network for easy task, and Circle and Wheel networks for difficult task), the solution times for four- and five-man networks were essentially identical.

In a later study, Morrisette (1966) ran subjects in three-man Circle and Wheel nets and compared the data to those previously obtained for four-man nets. All main effects were significant: Wheel nets were faster than Circles, solution times were faster for easy problems, and the three-man nets were faster than four-man nets. A size-by-structure interaction approached significance ($p < .10$), reflecting the result found in the previous analysis of five- versus four-man nets, that the effect of size was most pronounced in the Circle net. There are probably a number of differences in the Morrisette procedure which might account for the presence of a size-network interaction not found in the Walker study. For that matter, the interactions presented by Morrisette are of borderline statistical significance.

Unfortunately, this state of affairs is quite prevalent throughout the entire communication-net literature. It is almost impossible to make a simple generalization about any variable without finding at least one study to contradict the generalization. It seems highly likely that many of these contradictions ("noise" in our data about small-group communication nets) stem from the liberalness with which most investigators have treated the traditional .05 level. The problem of random error (false rejection of the null hypothesis) is particularly magnified for communication-net research, because there are a number of different dependent variables in each study, and a number of different ways of scoring the same variable. For example, solution time has been measured by taking the time on the single fastest trial, average time on the correct trials, average time on all trials, average time on later trials, average time required for all members of the group to obtain the correct answer, and average time for the first group member to obtain the correct answer. In the light of the massive confusion present in the literature, the time may well have come to tighten our statistical belts. A more rigorous attention to statistical criteria might well reduce the inevitable noise to the point where a meaningful pattern could emerge.

The nature of the task. Data from all areas of the small-group literature illustrate the importance of the particular task used. For instance, groups will be superior to the

individual on certain types of tasks, and vice versa (Collins and Guetzkow, 1964, pp. 13-68; quotation is from p. 16):

Groups are likely to perform particularly well when they are able to divide the labor of the task among the group members. For this reason, we would expect that "division of labor" will be an important critical demand for tasks which are used to compare individuals and groups. There is little reason, for example, to assume that a group of individuals will do a better job than a single individual of plotting the geographical location of enemy troops on a map. It's true that a group of kibitzers might catch an occasional oversight, but there is little that the extra "members of the group" can contribute to a single member's network. Since the task is simple and routine, 25 members would redundantly replicate each other's efforts with little gain by multiple checks.

According to this analysis, groups would be at a decided disadvantage in the tasks typically used in the communication-net studies. The solution is typically obvious and routine, with relatively little chance for error *if all information is available to a single individual*. The communication-net groups are placed at a further disadvantage, as compared to a single individual solving the problem, by the requirement that the answer then be communicated, often by tortuous procedures, to every member of the group.

This characteristic of the symbol-identification and related tasks probably accounts for the often reported superiority of a centralized communication structure, in which all information is sent to a single person and then the answer is sent or relayed back. The comparison between a centralized structure, in which a single person does all the actual problem solving, and an "each-to-all" communication pattern, in which every group member is involved in the actual decision making, is parallel to a comparison of the individual working alone versus group problem-solving. It may be true that there are many "real-life" situations in which a problem cannot be solved unless a crucial piece of information is received from every group member; but the kinds of tasks assigned to groups in the communication-net literature would typically be assigned to an individual or a computer in the "real world."

There are relatively few within-experiment comparisons of task variables. Heise and Miller (1951) varied network design and noise in the communication channels for groups working on word-construction problems, sentence-construction problems, and anagrams. But they used only three undergraduate subjects in all the conditions on the word problem, two of whom were also subjects in the sentence-problem experiments; and only two groups of three graduate students were used for the anagram problems—thus preventing any statistical tests. As can be seen in Table 4, Shaw (1954b, 1956) manipulated problem complexity. Both studies deal with a hypothesized interaction between network centrality and problem difficulty to be discussed below.

Morrisette and his colleagues (Morrisette, 1966; Morrisette, Pearson, and Switzer, 1965; Morrisette, Switzer, and Crannell, 1965; Morrisette and Vannoy, 1966) have attacked the problem of task difficulty systematically. They point out that the symbol-identification task, originally developed for the study of five-man groups, "cannot be used to study four-person groups without substantially changing its difficulty by some unknown degree The basic concept of information theory,

entropy $H = -\sum p_i \log_2 p_i$, which defines the degree of randomness of events emitted by an information source, is taken as a measure of task difficulty As H increases, the task becomes more difficult" (Morrissette, Pearson, and Switzer, 1965, pp. 187-188). In the first of two validation studies Morrissette, Pearson, and Switzer (1965) found (as did Leavitt) that the Y structures are significantly faster than the Circle structures for both Leavitt's original symbol-identification problem and the new task developed by the authors. In a second validating study using only the Y structure, performance was found to be significantly faster with easy tasks.

Noise. As Shaw (1964) has suggested, noise can be introduced into the process of information transition by a number of means, including "*channel noise* (transmission of messages is interfered with), *coding noise* (if coding and decoding processes are ambiguous), and *information noise* (apparently task-relevant information is interspersed among task-irrelevant information)" (p. 135). Noise, as might be expected, inhibited performance in the pilot study by Heise and Miller (1951), and in studies by Macy, Christie, and Luce (1953) and Shaw (1958). There is some evidence, often of borderline significance, that noise may interact with communication nets, in such a way that centralized nets suffer most from the introduction of noise.

Information distribution. Shaw (1954a) used a task in which eight pieces of information were needed to solve an arithmetic problem. In half the four-person nets, each group member was given two of the required pieces of information; in the other half, one of the more peripheral group members received five pieces, leaving one piece for each of the other group members. Information distribution did not affect *group* solution times. But the *individual* given five pieces of information solved the problem in less time than corresponding individuals given only two pieces of information! Gilchrist, Shaw, and Walker (1954) again found that information distribution had no effect on *group* time scores. As in the previous study, distribution of information did have some impact on the particular person receiving the extra information. Extra information in a *peripheral* position decreased time taken and increased satisfaction for that position, while extra information in a *central* position inhibited individual solution times. These findings led to the concept of "saturation," which Shaw (1964) uses as a major explanatory concept (see Table 6). But it is important to stress that these differences in *position* solution times were not associated with differences in *group* solution times—the standard measure of productivity in the communication-net literature.

Shaw (1956) distributed information randomly throughout the group for half of his groups, and for the other half concentrated it so that a given position had all the information concerning one particular aspect of the problem. Systematic distribution, as compared with random distribution, decreased time and errors and increased satisfaction scores.

Reinforcement stress. Lawson (1964a, 1964b) used a chime as a positive reinforcer and a buzzer as a negative reinforcer. The subjects were informed of the meaning of the chime and the buzzer at the start of the experiment. The "reinforcement" was not contingent upon the performance of the subjects, but was administered in random fashion at the end of each trial, the positive reinforcement being administered on 50 percent of the trials and the negative reinforcement on 50 percent of the trials. When the groups were working on a simple problem (1964a), reinforcement had an effect on the performance of Circle groups but not of Wheel or All-Channel groups.

The reinforced Circle groups were significantly faster than the nonreinforced Circle groups. For difficult problems, however, Lawson (1964b) found that All-Channel groups, but not Circle or Wheel groups, were affected by reinforcement. The reinforced All-Channel groups were significantly faster and sent significantly fewer messages than the nonreinforced All-Channel groups. The interpretation of these results is not clear.

Personality of group members. We shall not discuss personality variables here. Shaw (1964, p. 140-143) has reviewed a number of studies on the relationship between personality and performance in communication nets (Berkowitz, 1956; Mohanna and Argyle, 1960; Shaw, 1955a).

Opportunity to organize. In a series of papers, Guetzkow and his colleagues have taken off on a somewhat different tack from the initial Bavelas-Leavitt studies (Guetzkow, 1960; Guetzkow and Bowes, 1957; Guetzkow and Dill, 1957; Guetzkow and Simon, 1955). While the assumption is not always explicit, many social scientists have assumed that some nets make the task inherently more difficult. In contrast, Guetzkow and Simon argue (1955, pp. 233-234)

... that a sharp distinction be made between: (a) the effects of communication restrictions on performance of the operating task; and (b) effects of the restrictions upon a group's ability to organize itself for such performance. That is, instead of regarding the group's problem as unitary, it appears essential to separate the operating or "substantive" task from the organization or "procedural" problem. Our hypotheses may be stated thus. Imposition of certain restrictions on the communication channels available to a group affects the efficiency of the group's performance, *not directly* by limiting the potential efficiency of task performance with optimal organization in a given net, but *indirectly* by handicapping their ability to organize themselves for efficient task performance.

Guetzkow and Simon analyze the "organizational" or "procedural" difficulties in All-channel, Wheel, and Circle nets. In the Wheel net, an efficient centralized "one-level hierarchical" pattern of organization is possible. The four peripheral members can pass their information in to the central member, who then makes the decision and passes the answer back to the four peripheral members. (Since Guetzkow and Simon used the conceptually routine Leavitt task, there is probably little to be lost by having the problem solving done by only one group member.) A similar "two-level hierarchy" organization would also be available in the All-Channel net. The Circle nets, however, must develop a "three-level hierarchy": "If two neighbors send their information to their opposite neighbors, who in turn relay this information along with their own to the fifth member of the circle, this 'key man' can make the decision and relay the answer back through the 'relayers' to the 'end man'" (Guetzkow and Simon, p. 237).

If efficiency or organization is measured in terms of the number of channels which must be used in order to reach a decision, as is suggested by the Bavelas model, the two-level hierarchy would seem to be twice as efficient as the three-level hierarchy. "But the task is more than one of merely sending messages—messages must also be received, collated, and prepared. To compare efficiencies we need an estimate of the time required to perform *all* these task elements, and in proper sequence" (p. 237).

Guetzkow and Simon present Hellfach's Methods-Time Measurement analysis (Maynard, Stegemerten, and Schwab, 1948) of the two- and three-level hierarchies. Hellfach predicted "operating times for the two-level hierarchy of .445 minutes and for the three-level hierarchy of .437. The difference between these times (which actually shows the three-level hierarchy to be slightly more efficient than the other!) is not consequential" (Guetzkow and Simon, pp. 237-238). This is a significant departure from the assumption typically made in communication-net experiments, that "difficulty" is directly related to the number of channels which must be used. For example, Schein (1958), following the Bavelas model, states that "the efficiency of the group was determined by counting the number of steps they required to obtain the answer on any given problem" (Schein, 1958, p. 2). This index of efficiency would be uncorrelated with the Guetzkow and Simon Methods-Time Measurement analysis.

The major Guetzkow hypothesis, then, is that *if groups are able to achieve a satisfactory interpersonal organization* (either a two- or three-level hierarchy), there will be no differences in the amount of time required to solve the Leavitt task. In order to test this hypothesis, five-man All-Channel, Wheel, and Circle nets were studied with one important modification of the Leavitt procedure. During the "task" trials (when the subjects were actually trying to discover the missing symbol), subjects were restricted to communication directly relevant to the symbols. An intertrial interval was introduced between each "task" trial in which subjects were allowed to send nontask-related messages, including discussions of the nature of their communication net and possible organizational procedures.

One of the most frequently replicated aspects of the original Leavitt study is also reported by Guetzkow and Simon: The Wheel nets are significantly faster than the Circle nets on both total time and average of the three fastest trials. The All-Channel nets fell in between the Wheel and Circle nets.

There are two pieces of evidence which strongly support the major hypothesis that once groups have achieved a satisfactory operational procedure or organization, there will be no differences among the nets in times required to solve the problem. First, the differences between the All-Channel and Wheel groups disappeared at the end of 20 trials. "These findings hint that the Wheel groups, with the least difficult organizational problem, organized earliest; and that the All-Channel groups, with the more difficult job, organized more slowly, but were eventually performing as well as the Wheel groups; that the Circle groups had difficulty in organizing, not reaching optimal performance within the 20 trials allowed" (Guetzkow and Simon, 1955, p. 242). Inspection of the time at which the groups in the various nets actually did develop a "differentiated" organization (two- or three-level hierarchy, round robin, or chain) confirms this analysis. The second source of evidence in support of the Guetzkow and Simon hypothesis comes from a comparison of "organized" groups in the three networks (Guetzkow and Simon, 1955, p. 248):

The 15 Wheel groups (all of which we may regard as "efficiently organized") averaged .46 minutes for their fastest three trials The average speeds in the three fastest trials in the 17 All-Channel groups that developed two- or three-level hierarchies in both information and answer sending [had] a mean of .489 minutes. The corresponding mean for the three Circle groups which developed a three-level hierarchy was472 minutes. The differences between the means

of the organized All-Channel and Circle groups and Hellfach's estimate are not statistically significant; nor are the differences between the means of these groups and the means of the Wheel groups.

Mulder (1959a, 1959b, 1960) has presented a similar analysis. He argued that Leavitt and Shaw placed too much emphasis on the topological structure of the communications nets, which represents only the channels which *potentially* can be used. Mulder constructed an index of the extent to which groups *actually* achieve a centralized decision structure. For each group member, he counted the number of times the subject sent the solution to other group members, sent all the necessary information, or both. By dividing each individual's score by the total group score, he created an index of the proportion of the total amount of decision making which was done by the subject in that particular position. The *difference* between the position which did the most decision making and the position which did the least was an index of the extent to which the group actually achieved a centralized decision-making structure.

As might be expected, groups working within a Wheel net achieved a more centralized decision structure than groups working within the Circle. The most centralized Circle nets were faster than the least centralized, and the most centralized Wheel nets were faster than the least centralized. Furthermore, the most centralized Circle nets achieved a significantly greater degree of centralization than the least centralized Wheel groups, and are significantly faster—strongly supporting the hypothesis that it is *achieved* centrality rather than *potential* for centrality which produces fast solution times.

Shaw (1964, pp. 134–135) has argued that the above results do not, upon closer scrutiny, provide unequivocal support for the Guetzkow and Mulder hypotheses:

At first thought, it appears that all of these results support the Guetzkow hypothesis Unfortunately, there are some serious questions about the soundness of the methodology employed in these studies . . . *it is not at all clear that the degree of organization accounts for the obtained network differences* [italics added]. The evidence presented by Guetzkow et al. and by Mulder merely shows that efficiency and organization are correlated; it does not show that organization causes the efficiency. In a series of experiments dealing with this question, Schein (1958) traced the achievement of organization and efficiency across trials. Although he found efficiency and organization perfectly correlated at the end of the experiment, the achievement of efficiency developed *earlier* than organization. Thus it is evident that organization is not a prerequisite of efficiency. It could be just the opposite: more efficient groups tend to become organized, perhaps because the same abilities are required for both efficiency and organization development.

It is true that the Guetzkow and Mulder results are correlational. The one attempt to manipulate experimentally the degree of interpersonal organization in a Circle network was unsuccessful. Guetzkow and Dill (1957) allowed groups which were restricted to a Circle net during the task trials to use all channels during the organizational trials. They hypothesized that the availability of the extra channels during the organizational trials would allow the Circle groups to achieve the high degree

of organization during the restricted task trials which would render them as efficient as the Wheel nets. The hypothesis, however, was not confirmed. Although the distribution of time scores was bimodal (suggesting that half the groups organized and half failed), the overall mean time for the All-Channel-Circle groups was, contrary to the hypothesis, less than for the Wheel network.

It should be noted that the introduction of an All-Channel network during the intertrial organizational periods does not completely eliminate the procedural disadvantage of the Circle as compared to the Wheel network. For one thing, the necessity of dealing with two different networks, one for planning and one for task communications, could actually have confused the All-Channel-Circle networks. Second, the restrictions imposed by the Wheel network automatically nominate the person in the most central position as the "key man" or decision maker. This problem is not solved by the communication restrictions in the Circle network, since any of the five members is a reasonable candidate for the role of decision maker. Nonetheless, Shaw's basic criticism stands: the support for the Guetzkow hypothesis is basically correlational in nature.

On the other hand, the data from the Schein (1958) study are not so damaging as Shaw suggests. Schein defines "organization" in a different manner than Guetzkow or Mulder: "Organization was determined by observing whether messages were exchanged consistently according to some explicit plan *stated in the messages* [italics added]" (Schein, 1958, p. 2). Guetzkow and Mulder, on the other hand, define "organization" without any reference to an explicit planning process expressed in the intertrial messages. In fact, Guetzkow and Dill (1957) explicitly discuss a mechanism of organization, "local learning," by which a stable, differentiated procedural organization can be established without any explicit organizational-planning messages.

It may well be, as Schein suggests, that *explicit messages* about the interpersonal procedures are not a prerequisite of efficiency, but rather a way of ensuring the continuation of efficiency that was originally developed by a local-learning mechanism. The Schein data do not, however, disprove the hypothesis that the development of a stable, differentiated pattern of communication exchanges is a prerequisite to fast solution times.

Planning versus task activity

In his final analysis, Guetzkow (1960) concludes that the failure of groups in Circle networks to achieve a stable, differentiated procedural organization that would allow them to equal the efficiency of Wheel nets stems from the groups' inability to interlock their roles appropriately at the proper times. Furthermore, this inability is caused largely by the failure of groups to communicate during the intertrial periods about their organizational problem. The planning periods were not effectively used by the Circle groups, even when all channels were open during the intertrial organizational discussions.

Shure *et al.* (1962) further explored the variables limiting the effectiveness of group planning. Using only All-Channel communication networks, Shure *et al.* explored the impact of three different planning procedures:

1. *Separate-planning-period condition.* The separate planning group was highly similar to the original Guetzkow and Simon groups. A two-minute trial was intro-

duced between each of the 20 task trials. During these periods the subjects were free to send written messages concerning anything they wished, using blank cards.

2. *Contemporal-planning condition.* "The contemporal planning groups were not provided with these two-minute inter-trial intervals but were permitted to exchange extra-task written messages, as well as symbol messages, during the task trial" (Shure *et al.*, 1962, p. 268).

3. *No-planning condition.* "The no-planning groups were given inter-trial break periods but no opportunity to exchange extra-task written messages, in either the task nor the inter-trial periods" (p. 268).

The groups working in the separate-planning procedure first used by Guetzkow are significantly faster than groups using either the contemporary-planning or the no-planning procedures. "It was concluded that normal effort to organize in newly formed groups is subverted by task pressure which plunges the group members into the task 'with a sense of urgency and without preamble' (Cattell's 'hord urgency' factor) [Cattell, Saunders, and Stice, 1953]. Forced separation of planning and task performance, as in the separate planning groups, prevented this from occurring" (Shure *et al.*, 1962, p. 282)

While these results demonstrate the importance of planning, they do not explain why the Circle nets in the Guetzkow experiments were unable to achieve an optimal organization, the separate-planning procedure used in the Shure studies is identical to the planning procedures used in the Guetzkow studies.

A postscript on the efficiency of centralized nets

Leavitt and Knight (1963) use a modified Methods-Time Measurement analysis to explore the efficiency of certain noncentralized communication patterns. They suggested that the attention paid to the centralized, "relayer" organizations may stem from two factors: (1) subjects, in fact, often evolve such an organizational procedure; and (2) the heavy use made of the five-man net, with its odd number of positions, makes salient a centralized organizational pattern with two peripheral members sending information in to a single centralized member. Leavitt and Knight analyzed a number of hypothetical communication patterns which use a "swapping" relay process whereby the problem is independently solved by several members rather than by a single centralized decision maker. They concluded from their mathematical analyses of these nets that "the Circle is potentially more efficient than the Wheel which in turn is potentially more efficient than the Chain." Again the emphasis is to be placed on the word "potential." If the subjects develop the stable, differentiated organizational procedures described by Leavitt and Knight, *then* the Circle net will be the most efficient. The fact that such nets have not been spontaneously developed by groups of subjects working in these nets is probably an indication that the difficulties in establishing such a procedural organization are great. The Circle net, then, would achieve its superiority only after a heavy investment of time and intellect in the development of the most efficient interpersonal procedure.

The increased probability of such a "swapping" organizational procedure in groups with even-number positions is illustrated by a procedure actually developed in some of Schein's four-man groups. It seems that all four members of the group

will reach the solution in two steps if the members pair off, exchanging their numbers within each pair as the first step, between pairs as the second step (Schein, 1958).

Problem complexity and centralization of communication networks

Shaw (1964) argued that the major differences among networks are between centralized nets (Wheel, Chain, Y) and decentralized nets (Circle and All-Channel). He concluded that with simple tasks (for example, the Leavitt-type symbol-, letter-, number-, and color-identification tasks) the centralized nets will be superior. On the other hand, with complex problems (for example, arithmetic, word arrangement, sentence construction, and discussion) the decentralized nets will be superior. To illustrate the usefulness of this summary hypothesis, Shaw tabulated the results from 18 different experiments (see Table 6). Each comparison in Table 6 represents "a single difference in means (as reported in the literature) between a centralized and decentralized network, without regard to level of significance. For example, if an experiment involved three centralized and one decentralized network (as did Leavitt's study), three comparisons were made" (Shaw, 1964, p. 123). Table 6 indicates that, for complex problems, all 18 comparisons indicated superiority for the decentralized net. For simple problems, on the other hand, 14 of the 18 comparisons revealed that the centralized net was faster. Analysis of errors indicates the same pattern, although somewhat less pronounced. Some of the problems with this analysis were discussed in the section on task difficulty.

TABLE 6

NUMBER OF COMPARISONS SHOWING DIFFERENCES BETWEEN CENTRALIZED (WHEEL, CHAIN, Y) AND DECENTRALIZED (CIRCLE, COMCON) NETWORKS AS A FUNCTION OF TASK COMPLEXITY

	<i>Simple problems*</i>	<i>Complex problems†</i>	<i>Total</i>
Time:			
Centralized faster	14	0	14
Decentralized faster	4	18	22
Messages:			
Centralized sent more	0	1	1
Decentralized sent more	18	17	35
Errors:			
Centralized made more	0	6	6
Decentralized made more	9	1	10
No difference	1	3	4
Satisfaction:			
Centralized higher	1	1	2
Decentralized higher	7	10	17

* Simple problems: symbol-, letter-, number-, and color-identification tasks.

† Complex problems: arithmetic, word arrangement, sentence construction, and discussion problems

 DIMENSIONS OF GROUP STRUCTURE: POWER, AUTHORITY, AND INFLUENCE

In this section we focus on relationships in which some persons determine behavior, attitudes, beliefs, or other responses on the part of others. Although we shall use the word "power" most frequently, terms such as authority, influence, control, dominance, status, prestige, and rank are often used interchangeably. As is the case with all the structural relations discussed in this chapter, power relations can be represented in a variety of ways. See, for example, the graphic representation of authority in Fig. 3 and similar representations by French (1956) and Harary (1959). A matrix representation of power is provided by Thibaut and Kelley (1959), and Emerson (1964) uses the algebra of sets. Herbst (1952) uses a topological approach (Lewin, 1951) to represent the behavioral regions of the family controlled respectively by husband and wife.

We shall begin with a review of some observational studies of social-power relationships in naturalistic settings. We shall then define our area of concern more carefully and examine several differing approaches to the conceptualization of social power. There will follow a review of literature dealing with the bases of social power and their implications.

POWER PATTERNS IN NATURALISTIC SETTINGS

With a few notable exceptions, most of the literature on sociometric networks, coalition interdependence, and communication examines structures which were created in the laboratory as independent variables. In contrast, there is an extensive literature on the power structures which naturally evolve in ongoing groups.

Power structure in animals. Schjelderup-Ebbe observed the power structure in a flock of chickens and reported a consistent "pecking order." There was, he observed, an ordering of "despotism and rank as applied to birds" (1935). Dominance showed itself in their contact with others, in sexual prowess, in the elicitation of favorable or unfavorable responses, and in energy in social contact. The correlations among the various dimensions of power were high. The power relations were also linear. If we observe six chickens, we will soon find that chicken *A* will dominate the other five, *B* will dominate all but *A*, *C* will dominate all but *A* and *B*, etc., until we get to the last unfortunate chicken, who is the dominator of none but the recipient of pecks from five other chickens. When a new chicken enters the flock, he is initially subjected to attack from all the others. Schjelderup-Ebbe suggests that this represents a jockeying for position; it ends when the new chicken's position in the pecking hierarchy is clearly established. Landau (1951) developed and tested a probability model for this kind of dominance pattern in domestic hens.

Maslow and Flanzbaum (1936) observed dominance relationships in twelve pairs of monkeys, and found that the most frequent behaviors defining the syndrome of dominance or power were preempting of food supply (97 percent), mounting subordinate animal irrespective of sex (98 percent), bullying the other animal (99 percent), and initiating fighting in the pair (85 percent).

Maroney, Warren, and Sinha (1959) were successful in changing dominance patterns in monkeys by giving a low-ranked animal greater success in competition for food. Miller, Murphy, and Mirsky (1955) accomplished similar changes by shocking two middle-rank monkeys at the same time that a low-rank monkey appeared.

The effect of this manipulation was to place the low-rank monkey above the other two in the dominance scale. Interestingly enough, the entire pattern of dominance was changed, not just power relationships between the three critical monkeys. Other studies of animal dominance will be found in Chapters 18 and 36.

Power in the nursery school Influence patterning in children's groups at the nursery-school level nearly approximates the unidimensional and linear ordering observed in lower animals. Hanfmann observes a clear differentiation between leaders and followers. Different leaders may emerge in different situations, but the leadership comes consistently from one subgroup: the followers are always followers, accepting influence from any leader, though they may develop a linear power line among themselves (Hanfmann, 1935). In a day nursery school, Merei (1949) found individual differences in manners of exertion of power by the leaders, some being "diplomats," others direct "order givers."

Merei also separated from a group for a period of time those children who had been found to be dominant in free play in the nursery grounds, and allowed the "followers" to play together. During this period, the more docile children developed rules and traditions—consistent patterns of play. The "leaders" were then brought back to the ongoing groups in order to allow observation of how they reestablished their power positions. Those "leaders" who immediately attempted to assert themselves and continued to insist on major changes in group traditions were generally not successful in reestablishing themselves. The more successful leaders were those who worked within the established traditions of the group, then gradually began to suggest small changes: if the group tradition involved building a train in a particular fashion, the leader suggested a slight change in the smokestack; if there was a group running game, the leader ran with them but urged them to run faster.

Power in adolescent and youth groups. Thrasher (1927) studied the division of labor and status differentiation in gangs. W. F. Whyte's (1943) observational studies have demonstrated the value of a careful nonquantitative study of power relationships in ongoing groups. Whyte noted that the simple linear structure which one could chart with chickens did not apply so clearly in the street-corner society of young men in an "Italian slum." The young group members seemed to be in considerable agreement on the fact that "Doc" was their leader, with Mike and Danny as his chief lieutenants. However, the lines of authority tended to resemble the industrial organization chart, with Frank and Angelo each having two differing members to dominate, but being at approximately the same level of power with respect to each other.

Whyte did find evidence that superiority along one dimension of status would not always imply superiority in others, but he noted that such inconsistency carried with it strains toward corrective measures. For example, when a lower-rank member began to defeat a lieutenant in bowling, the signs of tension were obvious. Pressures were exerted on the low-rank member such that his bowling prowess was brought into line with his rank. Similar tendencies toward consistency in status dimensions were reported by Adams (1953).

In another series of studies on adolescents, Lippitt *et al.* (1952) utilized precise interviews and systematic questionnaires to examine authority and power patterns in camps for disturbed and normal adolescents. There seemed to be a clear power hierarchy within each cabin group, with general agreement as to who could influence whom. Furthermore, the attributed power relationships were highly correlated with

both direct influence and imitation or "contagion" as measured by observers. However, there were cultural and sex differences in bases for power (Rosen, 1959). *Power in the restaurant.* Whyte's (1948) observations in a restaurant provide an insightful analysis of changes in authority structure which accompany growth of an adult work group. Whyte observed that, as the restaurant grew from a small two-person operation, the "leader" began to change his functions so that they became more supervisional, less of his time being directed toward the work operation *per se*. Further growth and complexity of the organization led to more hierarchization of authority, with greater time being spent on supervision and a smaller percentage on the work operation. Whyte also observed authority differentiation in the kitchen: a person who handles beans will not handle salad; a potato peeler will not slice potatoes. The tensions which result from a waitress giving orders to the short-order cook were solved by placing a counter, and later a rotating spindle, between the waitress and cook; thus, the male cook would no longer be concerned about receiving directions from a person who by pay, by sex, by general status, was his subordinate.

It may be noted that Parkinson's law of the "rising pyramid," while presented tongue in cheek, seems to follow from Whyte's observations of increasing hierarchization of authority. Parkinson further suggests that there may well be a power motivation behind an official's desire to multiply subordinates, thus creating a hierarchy at the expense of efficiency (Parkinson, 1957). Terrien (1959) attempted to test such a hypothesis, and concluded that the "rising pyramid" really results from the limited number of dyadic relationships in which an executive can engage.

Power in mental health teams. In another study with adults, Zander, Cohen, and Stotland (1959) investigated role relations among psychiatrists, clinical psychologists, and psychiatric social workers, who often worked in teams. It seemed clear that a consistent power structure obtained, with the psychiatrists usually at the top of the pyramid and psychologists and social workers subordinate, the former tending to be more dominant. Consistent with some of the findings previously reported on subgroup formation (for example, Mills, 1953, 1954), this triad would often resolve into a dyad (psychiatrist and social worker), with the psychologist left on the periphery. A later study by Leff, Raven, and Gunn (1964) indicates that while psychologists will be equally influenced by psychiatrists or psychologists in their diagnoses, psychiatrists will differentiate, accepting more influence from psychiatrists, less from psychologists.

Power in the family. Strodtbeck (1951) has observed dominance patterns in husband-wife interaction. In a group discussion situation, he asked the husband and wife individually to rank families in their community according to various characteristics. There followed a discussion of differences and then a reranking of families. Which mate, he asked, would be dominant? That is, which would win the argument when there was a discrepancy between husband and wife? It appeared that cultural factors played a role. In the 10 white Protestant American couples, the husband won 39 of 72 arguments. In an equal number of Mormon couples, the husband was more dominant, winning 42 of 71 arguments. However, the wives were dominant in the 10 Navaho couples, winning 46 of 80 arguments. In any case, the argument was usually won by the spouse who talked first and talked most (Strodtbeck, 1954).

Herbst (1952) has looked more closely at the domain of authority and suggested a rather different approach to dominance of husbands and wives. Using the novel technique of asking children to respond to questions of role relations in the family,

Herbst asked questions such as "Who sees to it that the children get out of bed at the right time? Who decides at what time you have to get out of bed? How often do your parents disagree about what time you should get out of bed?" The first question determined who actually performed the activity; the second, the person who made the decision about the activity; the third, the degree of tension or disagreement associated with that activity.

The activities were then classified in terms of whether they were predominantly within the husband's role or the wife's role. The six classes established, ranging from wife roles to husband roles, follow, each with an example:

1. *Wife's household duties: ironing*
2. *Common household duties: doing the dishes*
3. *Child control and care: regulating the child's table manners.*
4. *Husband's household duties: mowing the lawn.*
5. *Social activities: inviting guests.*
6. *Economic activities: arranging for payment for holidays.*

If the husband performed any of the above duties, he would also perform all the duties which appear below it in the list. If he performed only three duties, these would almost certainly be numbers 4, 5, and 6. Of 74 husbands examined, only 10 deviated in any way from the above pattern. Child control and care, being a duty in the middle, was often handled by both parents, and it also led to the greatest amount of disagreement and tension in the family. It would appear that Herbst sees family decision areas as a contested territory, with husband's control expanding or contracting, but negatively correlated with wife's control.

Blood and Wolfe (1960) and Wolfe (1959) followed up the Herbst approach with a field survey of 731 wives in metropolitan Detroit. They found that they could rank-order decision areas in the family as within the "wifely" or "husbandly" domain, though they did not find so clear an indication of a Guttman scale as suggested by Herbst. They also presented a more formal categorization of families according to whether they were husband-dominant, wife-dominant, syncratic, or autonomic. Blood and Wolfe collapsed the multidimensional power measure into a single measure of husband-wife power. They reported that (1) husband dominance is more likely to occur when the husband is more successful and has a higher income; (2) wife dominance is greater if the wife is employed; (3) the wife's power decreases, the more need she has for love and affection; (4) the wife's power increases with age, (5) marital satisfaction is greatest in husband-dominant and syncratic families, least in wife-dominant families. In general, the husband's power in the decision structure is greater, the more instrumental he is in satisfying his wife's needs.

The husband's power apparently is greater during the periods when there are dependent children. This lends substance to Heer's (1963) comments on Blood and Wolfe. It is not merely a matter of relative control of necessary resources. Consistent with Thibaut and Kelley, the relative power of the wife would seem to be determined by the difference between the outcomes to her from the family group and the outcomes available to her in alternative possibilities.

Centers, Raven, and Rodrigues (1968) replicated the study on a Los Angeles population, with both husbands and wives included among the respondents. Their results were generally similar to those obtained by Blood and Wolfe. However, there

was also an indication that the pattern of dominance depended on the particular decision area (task domain) under consideration. In studies of interaction process analysis in the family, Bales and others have noted a different approach to authority structure, with differentiation according to socioemotional and task specialties (Bales, 1958; Bales and Slater, 1955; Strodtbeck and Mann, 1956).

Some conclusions. Our review of studies of power in natural settings is meant to be illustrative rather than comprehensive. We have purposely excluded the sizable body of literature on power relations in industry and in military settings, much of which is included in Chapter 39. These observational studies have stimulated much of the theoretical and laboratory studies of social power reviewed in the following sections, even though the later investigators are often not prone to give full credit to the sources of their theorizing.

When we compare power relations in different social units, the complexity of the ordering becomes of particular interest. In relatively simple social structures among animals, a unidimensional ranking by dominance is quite common. The animal most successful in driving others away from the food trough is also more likely to drive other animals out of his territory. Thus, not only is there a simple *A-B-C-D* ordering of power, but rank order of all dimensions (for example, food stealing and territorial protection) places the same animal in the same rank order for several dimensions (aspects) of power. With nursery-school children, the ordering gets more complicated—although there seems a consistent rank-ordering, branching is more likely. With adolescent gangs, the rank-order correlations among various dimensions of power are less than perfect. A youth who is a leader in one activity is not always a leader in another, nor is the youth most successful at directive influence most likely to be successful at nondirective influence. In the analysis of husband-and-wife interaction, the power structure shows even greater variability and multidimensionality, with dominance varying according to task domain and changing with time. In studies of power in larger organizations—industrial, military, and educational settings—the power structure becomes even more complex, involving the additional considerations of formal and informal power structures.

A DEFINITION OF SOCIAL POWER AND DIFFERING CONCEPTUALIZATIONS

Now that we have examined some field observations of “social power,” a more careful definition of the concept is in order. For our purposes, we shall use the definition suggested by French and Raven (1959) and by Cartwright (1959a, 1965). Social power is defined as the potential influence of some influencing agent, *O*, over some person, *P*. Influence is defined as a change in cognition, attitude, behavior, or emotion of *P* which can be attributed to *O*. Other useful definitions and reviews of power are provided by Allen (1965), Bierstedt (1950), Blau (1964), Cartwright (1959a, 1959b), Cartwright and Zander (1968), Collins and Guetzkow (1964), Dahl (1957), Emerson (1962, 1964), Harsanyi (1962a, 1962b), March (1955, 1957), Schermerhorn (1961), Schopler (1965), Secord and Backman (1964), Tannenbaum (1962), and Thibaut and Kelley (1959). The structure of influence is often discussed under the heading of “leadership” (for example, Bass, 1960; Hollander, 1964; Janda, 1960; Stogdill, 1959). Cartwright’s recent overview is particularly comprehensive (Cartwright, 1965).

Most of the social-psychological literature on social influence and power in small groups could be subsumed under four headings: (1) Freudian or psychoanalytic,

(2) reinforcement, (3) social exchange, and (4) field-theoretical. We shall review each of these briefly before proceeding to an analysis of empirical studies of social power.

Psychoanalytic approaches to social power and influence

The influence of Freud on present-day social-psychological theory, and specifically on studies of social power, is undoubtedly greater than most students in the field are ready to recognize. We have so incorporated Freudian and neo-Freudian concepts into our general systems that we are no longer aware of their origins. Such concepts as "identification," "internalization," "displacement," "projection," "rationalization," "authoritarianism," "ego ideal," with or without the use of the specific terms, have become accepted in many theories of social power. Though Freud's *Totem and Taboo* (1913) and *Group Psychology and the Analysis of the Ego* (1922) were most explicit in their treatment of social-psychological problems, many of Freud's other works have also contributed their share to social-psychological theory in less direct fashion. Among the major areas in studies of social power which likely have their origins in the psychoanalytic approach are (1) consideration of power relations as occurring without conscious awareness, (2) power and influence as a defense mechanism (for example, identification with the aggressor), (3) relationship of power relations to child-rearing practices, (4) identification with the leader or power figure as a basis for influence, (5) authoritarianism as a personality trait, (6) conflicting attitudes toward the influencing agent, and (7) need for power or submission as related to basic psychodynamic mechanisms.

Much of the current literature applying psychoanalytic theory to social influence has developed through analysis of therapy groups and groups with behavior problems. Since it is discussed in some detail in Chapter 4, we shall not review that literature here. Useful references include Redl (1942), who analyzes the functions of the leader in analytic terms, Bion (1949a, 1949b, 1961), who examines the defensive patterns involving social power in therapy groups, and Scheidlinger (1952, 1960). Bandura and Walters (1963) offer an interesting reanalysis of the concept of identification, particularly "identification with the aggressor" (Bettelheim, 1943), presenting several clarifying experiments within the context of social learning theory.

Reinforcement approaches to social power

Learning approaches to social influence go back to the earliest experiments in social psychology (Allport, 1920). To anyone who assumes some form of the "Law of Effect," it would be obvious that a person who mediates rewards or aversive stimuli for another can thereby determine behavior for the potential recipient. After largely surrendering the field of social psychology to field and cognitive theorists for many years, reinforcement theorists appear to be reentering the domain of social psychology with renewed vigor and sophistication (Campbell, 1961). One line of research is seen in the vast verbal conditioning literature (for example, Greenspoon, 1955; Taffel, 1955). Another area of investigation is that dealing with imitation and modeling (for example, Bandura and Walters, 1963; Miller and Dollard, 1941). These will be reviewed further below.

Reinforcement can also contribute directly toward the development of status relationships. Earlier, we observed that animals who were punished for not moving

in the presence of other animals would soon learn to do so, thus altering the entire "pecking order" (Miller, Murphy, and Mirsky, 1955). In human groups, it has been demonstrated that subjects low on leadership activity learn to behave in a more dominant fashion if such behavior is positively reinforced; similarly, those high in directive behavior become less dominant if there is verbal disapproval (Pepinsky, Hemphill, and Shevitz, 1958).

Social exchange and social power

The social-exchange approach to social psychology has its origins in economic analyses and game theory (Von Neumann and Morgenstern, 1944) and the matrix representation of interaction as presented by the Luce and Raiffa (1957) review. Thibaut and Kelley (1959) extended the social-exchange analysis to many of the problems considered by students of the small group. Since their approach is most widespread in small-group research today, we will deal mainly with their analysis of social power in small groups. The formulations of Blau (1964), Emerson (1956, 1962), Homans (1961), and Schelling (1960) can be seen in a similar context.

Thibaut and Kelley begin their analysis with an examination of limited social interaction in the dyad, later extending it to the more complex interactions involved in larger groups. The two members of the dyad are seen as each having a repertoire of potential acts. These can be represented in matrix form, as in Figs. 7 and 8. The consequences of a combination of acts by persons *A* and *B* are indicated in the intersecting cells.

In Fig. 7, we see a tourist shopping for a rug in a market. The tourist has one bill in local currency worth \$3.00, and another worth \$6.00. Since the merchant has no change, the tourist can offer to pay \$3.00, \$6.00, or \$9.00. Theoretically, he could also offer to pay nothing, which would obviously mean no sale (a_0 , b_0). The merchant can offer three rugs, wholesale costs to him being \$2.00, \$3.00, and \$9.00. The corresponding values of the rugs for the tourist, determined by the potential satisfaction which he might gain from them, are \$3.00, \$9.00, and \$12.00, respectively. These are the values, costs, and rewards, which are entered in the cells in Fig. 7. Obviously, the merchant would like to sell rug No. 1 for \$9.00 and realize a tidy profit of \$7.00, but this is not a likely outcome, since the tourist would not pay \$9.00 for a rug which is worth only \$3.00 to him. Nor would the tourist be able to purchase rug No. 3 for \$3.00, much as he might want to. Ultimately, the most likely outcome would be that in which the merchant sells rug No. 2 for \$6.00 (a_2 , b_2), leaving both negotiators moderately, though not completely, satisfied.

It is to the credit of the social-exchange approach that it provides a conceptual scheme for what appear to be disparate social-interaction phenomena. For indeed, the purchase interaction is an instance of social dependence and social power, even if we do not ordinarily think of it in this way. The behavior of each participant was altered so as to realize maximum payoff at minimal cost. Each participant had some power over the other: the merchant was dependent on the tourist for the money which the tourist could provide; the tourist was dependent on the merchant for the rug which he desired. As Thibaut and Kelley point out, the power of the tourist would decrease to the extent that there were alternative interpersonal relationships available to the merchant which would provide more optimal cost-reward outcomes (for example, other tourists with more money to spend on rugs). The power of the

Tourist's response repertoire (A)

		a_0 Pay nothing	a_1 Pay \$3 00	a_2 Pay \$6 00	a_3 Pay \$9 00
Response repertoire for rug merchant (B)	b_0 Sell no rug	0, 0 0, 0	0, -3 +3, 0	0, -6 +6, 0	0, -9 +9, 0
	b_1 Sell \$2 00 rug (1)	+3, 0 0, -2	+3, -3 +3, -2	+3, -6 +6, -2	+3, -9 +9, -2
	b_2 Sell \$3 00 rug (2)	+9, 0 0, -3	+9, -3 +3, -3	+9, -6 +6, -3	+9, -9 +9, -3
	b_3 Sell \$9 00 rug (3)	+12, 0 0, -9	+12, -3 +3, -9	+12, -6 +6, -9	+12, -9 +9, -9

Fig. 7 The power of the rug merchant over the tourist (and vice versa). Values above the diagonal lines indicate costs and rewards for the tourist; values below indicate costs and rewards for the rug merchant. The three rugs cost the merchant \$2.00, \$3 00, and \$9.00, respectively. (After Thibaut and Kelley, 1959.)

merchant over the tourist would decrease to the extent that there were other merchants competing for business. Competition, then, is related to decreased social power.

The matrix representation is, of course, not considered the end point of analyses of social interaction, but rather as a means for illustrating some of the features of social exchange. Obviously, not all of the possible behaviors of the participants were included in the example above. For example, the merchant could have lowered prices on some of the rugs, and the tourist could have offered amounts other than those specified. Furthermore, each could have attempted to mislead the other as to the values of the rugs for him, or to indicate other potential competitors—other customers or other dealers in another part of town. The merchant could have attempted to change the values of the rugs for the tourist. Perhaps he would say that rug No. 1, while simpler in form, was once owned by the sultan himself, thus giving it a much higher value. Similarly, the tourist could point out the flaws in rug No. 3.

The problem of determining the values which go into the matrix are formidable. Thibaut and Kelley determine these costs and rewards in a given cell in terms of what these values would be for the interactors if that combination of behaviors were to occur. But what exactly are the values for the participants? A typical experiment within the social-exchange framework assigns values in terms of dollars and cents, or point scores, and is then based on the assumption that these values reflect the

actual psychological values for the participants. This may be a reasonable assumption for that limited experimental situation. Determining values in a "real-life" setting would be more difficult. The theorist must then attempt to reconstruct what would be the value of an outcome for the coactor if it were to occur. If he wishes to predict the immediate choice of alternatives for the actor, he faces further difficulties, since the monetary evaluation of the outcome might not correspond to what the ultimate outcome would be—the values will often change as a function of interaction. The actor, in selecting his alternative, would also want to estimate the probabilities related to the coactor's choice; thus, the investigator would have to reconstruct the other person's values as well. Indeed, a common strategy which actors use is to mislead the coactor as to what the costs and rewards are for differing alternatives; for example, the rug merchant might suggest that he could not part with rug No. 3 except for a great amount of money because it is an old family heirloom. An alternative method of determining values is in terms of phenomenological definition—what is the value and cost in each cell for a given participant at a given point in time, and how does that participant see the costs and rewards of the other participant? If one were to adopt such an approach, it would necessitate a separate set of matrices for each participant, and perhaps a calculation of subjective probabilities of outcomes. It was apparently the decision of Thibaut and Kelley that such phenomenological definition would add more problems than it would solve; hence, they decided to begin with a less subjective definition of values. Later research stimulated by this conceptual scheme has led to analyses of strategies such as those described above, in which the investigators go beyond the matrix representation.

An important distinction is made by Thibaut and Kelley between "fate control" and "behavior control." Person *A* is said to have fate control over person *B* if by choosing his behavior he can then determine *B*'s outcomes regardless of *B*'s behavior. Figure 8(a) is an example of fate control. Figure 8(b) illustrates behavior control of *A* over *B*: *A* can make it to *B*'s advantage to select either b_1 or b_2 by his own choice of a_2 or a_1 , respectively. Figure 8(b) might represent two women, *A* and *B*, who plan to attend the same party. Each happens to have a choice of just two party dresses, a

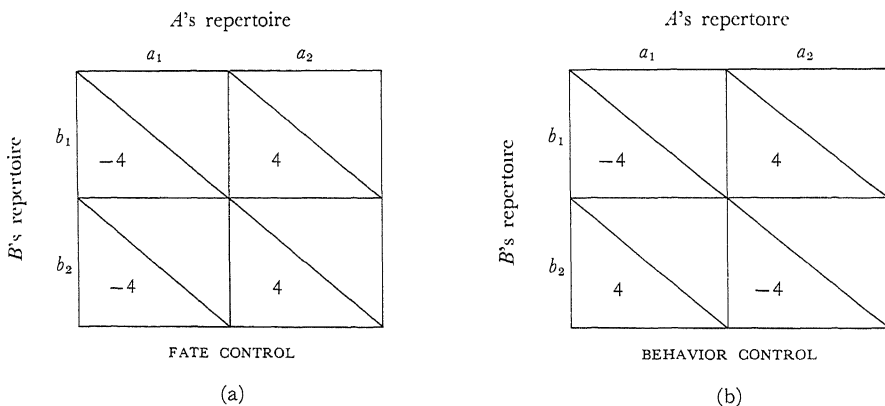


Fig 8. Illustration of fate control and behavior control of A over B. (After Thibaut and Kelley, 1959.)

blue dress (a_1 and b_1) and a green dress (a_2 and b_2). For B , wearing either dress would be pleasurable (value of +4). However, the embarrassment of seeing someone wearing the same dress (cells a_1, b_1 or a_2, b_2) is such as to involve a psychological cost of -8, or a net satisfaction of -4. Thus A can be said to have behavior control over B . If A announces that she will wear blue, then B will wear green, and vice versa. Note that in both Fig. 8(a) and (b) the rewards and costs for A are not indicated. It may be that the costs for A of wearing the same dress would be as great as or even greater than for B . Thus, as Thibaut and Kelley proceed from their discussion of fate and behavior control to social power, they add the concept of "usable power"— A 's control over the behavior of B would be diminished as a function of the costs which would accrue to A from choosing a_1 or a_2 (1959, p. 107). It is indeed common for persons to have mutual behavior control or mutual fate control (as in Fig. 7).

Casual analysis might suggest that fate control results in less control over behavior than behavior control: once A has chosen a_1 or a_2 in Fig. 8(a), B 's outcomes are determined and B can thus choose without further concern for A . However, Thibaut and Kelley point out that it is possible to convert fate control into behavior control: A can do this (in Fig. 8a) by always performing a_2 whenever B performs the act which A desires. Figure 7 is an illustration of mutual fate control of B over A and A over B , where such fate control may be converted into mutual behavior control.

Further discussions of the social-exchange approach to social power are included in Schopler (1965), Blau (1964), Emerson (1962), Homans (1961), and Jones and Gerard (1967). Bargaining or negotiation situations are most easily represented by the social-exchange analysis, thus reflecting its economic progenitors, and much of the research growing out of the social-exchange approach has an economic aura about it. There is also a tendency to resolve all bases of social power into the exchange system, converting the bases to commodities or costs. Thus, Thibaut and Kelley recognize that some persons assume power over others by virtue of their having superior knowledge or expertness (1959, p. 109). However, they still view this expertise as a commodity, which the expert can offer or withhold. The superior knowledge has then a fixed value for the potential recipient and he will conform to the wishes of the expert in order to have access to that knowledge. Yet, despite the problems which it presents, the social-exchange analysis has had a considerable impact on the direction of research in social interaction and has stimulated an increasing body of research.

Field theory

In recent years the largest body of research and theory on social influence and power in the small group has followed in the cognitive-field-theoretical tradition, particularly as fostered by Lewin (1951), Heider (1958), and Asch (1952), and developed further by many others, such as Cartwright (1959a, 1959b, 1965), Festinger (1950, 1953, 1954, 1957), French (1956), French and Raven (1959), and Lippitt (1939).

Among the characteristic elements of a field-theoretical definition of social power are (1) *psychological definition*—the influence relationship is defined in terms of the manner in which it exists for the persons involved—and (2) *dynamic analysis*—implicitly or explicitly, the field theorist considers effective influence as arising from tensions or needs in the person. Changes following influence attempts are in the direction of minimizing or eliminating such tensions. The subsequent change is

then again seen as following from the resultant of forces, including resistance forces counter to the influence attempt and alternate forces which have their source in different power figures. Both "own" and "induced" forces play a role in the direction of change. Thus, included in an analysis of influence would be the tension or need system of the person (*P*), the act of the influencing agent (*O*) as perceived by *P*, barriers or restraining forces against the influenced behavior, the valence (positive or negative evaluation) of *O* for *P*, the valence of the act itself for *P*, and the valence of alternative acts for *P*.

Usually, the influence is analyzed from the point of view of *P*, the recipient of influence attempts. However, a full field-theoretical analysis of an influence situation should also consider the psychological field of the influencing agent and the factors which lead him to attempt influence in a given manner. It is also consistent with field theory to analyze power as a reciprocal interactive relationship, allowing for the influencee to become an influencing agent for *O* at the same time that he is being influenced. Thibaut and Kelley's formulation explicitly analyzes influence in such terms, as does Newcomb in his A-B-X system (1953).

Cartwright's statement (1959b) represents the most explicit analysis of power in terms of the terminology and phrasings of Lewin. The theoretical articles of French and Raven (1959) and Raven (1965), though less explicit in their references to the original terminology of Lewin, are still in that tradition.

TYPES OF POWER

The manner in which power structures affect group behavior depends not only on the patterning of power relationships, but also on the *type* or *basis* of the power relations. French and Raven (1959) and Raven (1965) suggest a typology of six sources or bases of power.

The first is *informational power*. The most important characteristic of informational influence is that it is socially independent of the source. Following lines of thought suggested by Festinger (1953), Lewin (1951), and Heider (1958), French and Raven classify influenced behavior as being socially dependent or independent of the source. Heider (1959, pp. 4-5) helps to clarify this distinction in his comparison of the movements of a ball which is given a shove as compared to one which is guided by a human hand:

In one case, a ball is pushed so that it rolls across a plane. In another case, the ball is guided by a hand and its movements are dependent at each moment on the movement of the hand . . . in the first case, an influence from the outside is active once . . . in the other case, when the ball is guided during the whole movement, the course of events is continuously influenced from the outside.

Independent influence is the result of a basic change in cognitive elements, and its basis is information communicated by *O*. It is the content of the communication that is important, not the nature of the influencing agent.

Coercive power occurs when *P* believes that *O* will punish him if he does not comply. *Reward power* occurs when *O* can mediate rewards for *P* (for example, recommend a raise in his pay). For both reward power and coercive power, *P* continues to relate his compliance to *O*. It is also important to note that *O* cannot mediate reward on

the basis of compliance unless he knows whether compliance has occurred. Thus observability or surveillance by *O* is important if influence is to occur with reward or coercive power. The type of change is called *public* dependent.

In other patterns of influence involving social dependence, surveillance by *O* is not necessary. One such form of social power is *referent power*, which stems from *P*'s identification with *O* and a desire to maintain similarity with *O*. The concept of the "reference group," from which the term "referent power" derives, was first used by Hyman (1942) and elaborated by Sherif and Sherif (1956), Merton and Kitt (1950), Shibutani (1955), and others. Kelley (1952) points out that reference groups may have either a normative or a comparison function. The normative function involves the setting of standards for attitude, belief, and behavior, as well as the enforcement of such standards. Since it appears to involve reward and coercion, the normative function of reference groups is not classified as referent power. More consistent with the notion of referent power is the "comparison function" of reference groups: groups serve as a standard or comparison point against which individuals compare or evaluate themselves. Festinger (1950, 1954) assumes that persons continually need to evaluate themselves, to determine whether they are thinking, feeling, or acting correctly. Particularly when the environment provides no "physical reality," no "objective" basis against which the person can evaluate himself, the person will look to others for "social reality."

Another form of power which is socially dependent but does not require surveillance is *expert power*. Expert influence stems from *P*'s attribution of superior knowledge or ability to *O*; *O* then functions for *P* as a guide, indicating the path which would most likely lead *P* to reach his goals. The degree of expert power of *O* over *P* is a function of the extent to which *P* attributes knowledge to *O*, the amount of knowledge which *P* feels he himself has, and the degree to which knowledge of both is specifically related to the object which is being judged.

A third form of private dependent power which does not require surveillance is *legitimate power*. There is general agreement and considerable evidence that there exist broad, general norms about what sorts of behavior, belief, opinions, and attitudes are appropriate or proper. Whether such determinations come from tradition, from internalized values, or from present expectations of others, each person carries with him a set of prescriptions which he applies to others. These prescriptions create a dimension of evaluation we have called "legitimacy."

Legitimate behaviors usually differ according to a person's position in a social structure. In the family, there are some behaviors which are appropriate for the father, some for the mother, and some for the older and younger child (see Chapter 7). Included in these behaviors or "role prescriptions" are the requirement or acceptability for a person in one position to determine behavior or belief for one in another position, and the requirement that the latter obey the former. Legitimate influence, then, is based on *P*'s acceptance of a relationship in the power structure such that *O* is permitted or obliged to prescribe behaviors for him and *P* is legitimately required to accept such influence. Legitimate influence or power is similar to the concept of legitimate authority long discussed by sociologists (for example, Goldhamer and Shils, 1939; Weber, 1947). Janda (1960) defines leadership in terms of legitimate power.

Legitimate power can arise from long-held cultural values, but since "legitimacy" is a belief in its own right, it is itself subject to all the private social influences de-

scribed in this chapter. Legitimacy can be established by *informational influence* (a communication which effectively argues that the agent, being a direct heir to the throne, has a right to prescribe behavior for his subjects), by *referent influence* (all the members of one's work group believe that a particular group member should coordinate the behavior of the others), by *expert influence* (a time-study expert determines that a given worker should be designated as supervisor, in order to maximize efficiency), or by *legitimate influence* (for the regular army enlistee, who accepts the structure of the army, the company commander has the right to designate one member of a work detail as being temporarily in charge).

Negative power In some cases, influence is negative; changes occur which are opposed to the intentions of the agent or which increase the discrepancy between the influencee and the agent. For negative referent influence, the influencee tends to dissociate himself from the agent. "Beatniks" or "Bohemians" may claim to be unconcerned about the norms of society as a whole, desiring to be nonconformists, but they strive to behave, look, and dress differently because society serves as a *negative referent* for them. Parents may sometimes use other children as negative referents for their own: "Don't shout like that. Do you want to be like Johnny?" *Negative legitimacy* also operates in certain rare cases, such as those involving prisoners of war who define the role structure as demanding that they do the opposite of whatever the captor requests. *Negative informational* influences may occur when the agent inadvertently calls the attention of the influencee to factors which lead him to diverge from the agent. *Coercion* and *reward* may also produce negative effects, but generally by affecting one of the other sources, as will be indicated later. Willis (1963) and Willis and Hollander (1964) use the term "anti-conformity" to refer to negative power. Tannenbaum (1962) considers obedience as a function of "positive authority" and "negative authority." Brehm (1966) uses the term "reactance" to refer to negative influence which results from a threat to independence or freedom.

EMPIRICAL STUDIES OF POWER, INFLUENCE, AND CHANGE IN THE SMALL GROUP

In our survey of empirical research dealing with power and influence in the small group, we will use the category system of French and Raven (1959). First, we shall examine relevant studies according to the basis of power—reward, coercion, referent, expert, legitimacy, and information. We shall then examine comparisons between different bases of power as these are related to surveillance, permanence of change, attitudes toward the influencing agent, and other variables.

REWARD POWER, COERCIVE POWER, AND PUBLIC DEPENDENT CHANGE

In comparison with other types of power, there has been relatively little research directed specifically at reward and coercive power. This may be because, until the recent flurry of research on "forced compliance," investigators considered this area of investigation trivial, with results being obvious. Who would be surprised to find that a person is more likely to conform to the demands of another if he is promised a reward or threatened with punishment for noncompliance?

Most of the data on reward and coercive power have been generated by the learning approaches to social influence. Typically, studies on reward and coercion manipulate or examine "impersonal" rewards and punishments—fines, electric shocks, threats of dismissal of workers, physical punishment. However, many other studies, developed with differing terminologies, actually involve what Raven (1965) has called "personal" reward and coercion—approval, disapproval, love, hate, liking, disliking, agreement, disagreement, etc. The threat of maternal disapproval may be a much more potent basis for coercive power than would the threat of a spanking for non-compliance. The potency of personal reward or coercive power would, of course, be a function of the attractiveness of *O* for *P*. Disapproval from a disliked source would not increase conformity. It thus appears that approval and disapproval, love and hate, acceptance and rejection may in some cases become commodities which can be proffered or withheld as a basis for power and influence. The withholding of love and affection as a form of social control has long been recognized by clinical psychologists and students of the family. Wolfe (1959), for example, found that the husband's role in the family increases as a function of the wife's need for love and affection.

The literature on verbal conditioning (Greenspoon, 1955; Taffel, 1955) is probably the best-documented work on reward and coercive power. The experimenter commonly "reinforces" a response (for example, making up sentences with plural pronouns as compared to singular pronouns, or composing sentences with self-references) with the word "good," "um-hm," or some other indication of approval. Or he may negatively reinforce a response by saying "bad" or "uh-uh." Positively reinforced responses are apt to continue; negatively reinforced responses are apt to be suppressed. The argument that approval is reinforcing is supported by the findings of Gewirtz and Baer (1958a, 1958b), that approval and disapproval by an adult become more powerful after social isolation.

A systematic approach to imitative behavior was presented by Miller and Dollard (1941) in an analysis of such influence patterns as learned responses. If one child picks up one of two boxes and finds candy in it, a second observing child will often pick up the same box and receive a similar reward. In this "matched-dependent" behavior, *P* relies on *O* for the relevant cues, then matches his behavior accordingly. In "copying behavior," *P*'s focus is on the behavior of *O* himself rather than on relevant cues in the environment—similar behavior becomes an end in itself. Cognitive theorists point out that interviews with the subjects often reveal that they actually altered their perceptions of the situation, rather than merely matching responses. Indeed, often *P* would initially go to the box other than the one selected by *O*, explaining that if *O* had taken the candy from the first box, there would probably be none left there (Asch, 1948, 1952; Scheerer, 1954). After several years in limbo, the reinforcement analyses of imitation have been expanded in an exciting series of studies on social influences of adults and peers on children (Bandura, 1965; Bandura, Ross, and Ross, 1963a, 1963b, 1963c; Bandura and Walters, 1963). The concept of vicarious learning has proven useful in analyzing "modeling" or "imitative" behavior (Bandura, 1965).

In dealing with more complex social organizations, reinforcement theory and control of deprivation and aversive stimuli have played an important role in recent formulations by Homans (1961) and Adams and Romney (1959).

Surveillance

Schanck (1932) reports an interview study with residents of a small rural community. The residents in the interview indicated unanimous rejection of card playing, liquor, and smoking—attitudes which were in keeping with the norms of the local church of which they were all members. However, Schanck reported that while he lived in the community he had played cards, drunk hard cider, and smoked with a number of residents of the community—always with doors closed and blinds carefully drawn. If the influence of the church had been solely legitimate, informational, or referent, then there would have been no discrepancy between public and private behavior. Asch reports a similar phenomenon in his classic experiment (1956). Although subjects “conformed” when faced with an erroneous majority, later interviews indicated that a large number of conforming subjects had perceived correctly the lines being judged. In other words, few conformers actually showed *informational influence*, since most had not “seen” the lines as they had reported them. (Asch uses the term “distortion of perception” to describe the behavior of these few subjects.) The greatest number of conformers showed what Asch called “distortion of judgment.” They apparently assumed that the group was answering correctly, and therefore went along with the group, even though their judgments and responses did not comply with what they perceived. In a variation of the original experiment, conformity decreased when the responses were made in private, without the majority being able to learn the responses of the deviate. However, some conformity occurred even in the private condition, suggesting that coercion and reward were not the only bases for influence (Deutsch and Gerard, 1955).

Other investigations have shown greater conformity under surveillance than nonsurveillance in conditions of implicit or explicit reward or coercive power (Burdick, 1955; Gerard, 1954; Hardy, 1957; Kelman, 1958; McBride, 1954; Raven and French, 1958b; Zipf, 1960).

Distinguishing reward and coercion

Questions might be raised as to the usefulness of making a distinction between coercive and reward power. One could argue that they are opposite sides of the same coin. But there are several reasons for assuming a distinction. For one thing, the attitudes of *P* toward *O* will be affected by whether *O* uses reward or punishment. Attitudes toward *O* will be more negative if *O* uses coercion, particularly if he is seen to do so inappropriately (French, Morrison, and Levinger, 1960; Raven and French, 1958a, 1958b; Zipf, 1960). Thus, one would expect other sources of power, such as referent power and personal reward power, to become greater when reward power is used, and negative referent influence, or a boomerang effect, to operate at the private level when coercive power is used.

Baxter, Lerner, and Miller (1965) report an exception to this rule. They compared subjects who were led to expect punishment (electric shock) for incorrect responses, reward (cash payment) for correct responses, or information (“right” or “wrong”) for successes or failures. They found that subjects with authoritarian parents showed greater identification with the instructor under the punishment condition, while those with democratically oriented parents identified with the instructor more in the reward or information condition. Thus, we might expect some instances

where social expectations would lead to greater private change under conditions of punishment. A study by Brigante (1958) also adds limitations to the relationship between punishment and reward power and attraction of *P* to *O*.

Thibaut and Kelley (1959) and Ring and Kelley (1963) make the interesting observation that surveillance is particularly difficult with punishment or coercion power, since *P* will be motivated to hide his behavior from *O*. By contrast, *P* will have good reason to call attention to his conformity, if reward is the basis for influence.

Clarity of reward and punishment contingencies

If *O* is to use rewards or punishments to achieve power, he must know exactly what factors are rewarding to *P*. In one study, nurses were asked to rank which rewards they considered most important—promotion, salary increase, praise, better job, educational opportunity, etc.—and also the likelihood of receiving that reward. The amount of time which each nurse spent on a given work activity compared to the amount of time considered appropriate by her supervisor was used as a measure of power. Greatest conformity to the desires of the supervisor was found when the supervisor controlled the appropriate reward, and especially when he accurately perceived the reward system of his subordinates (Bennis *et al.*, 1958). Cohen (1959) has also shown that power can lead to great anxiety and threat for *P* if *O* is not precise in indicating what behaviors are to be rewarded or punished. This is particularly true for subjects with low self-esteem.

REFERENT POWER

Referent power is defined as power which has its basis in *P*'s identification with *O* or *P*'s desire for such identification. Sherif's classic study (1936) of group pressures on judgment of movement of a pinpoint of light in a completely dark room (the autokinetic effect) illustrates referent power. The light seen in the absence of any background appears to move, and the subject, on request, reports the degree of movement in inches. At first his judgments fluctuate, but soon his estimates of movement stabilize. Three subjects, who have individually arrived at different judgments (for example, one inch, two inches, and eight inches, respectively), are then placed in the same room and asked to report their judgments aloud. With successive judgments, they gradually reduce their discrepancy and arrive at one common stable judgment. Sherif argues that each individual is using the group as a frame of reference, a background or yardstick against which to evaluate his own responses. Those who are most deviant from the others are especially likely to move toward the norm; *O* then becomes a basis for self-evaluation for *P*. French (1956) has presented an interesting analysis of influence in the autokinetic situation in terms of graph theory.

The social-comparison literature can be reviewed under the referent-power classification. The operation of referent influence is illustrated in Fig. 9, which was largely suggested by Festinger's (1950, 1954) discussion of social comparison processes. The theory represented in the chart assumes that we have a person who has a need to evaluate himself (A), a need which is quite general but which may become especially salient in some circumstances. A person needs to believe that he is behaving appropriately, that his beliefs, judgments, or attitudes are correct, that his abilities and performance are proper. When he is faced with an unusual situation (B), and especially where some action is required, the need for self-evaluation becomes es-

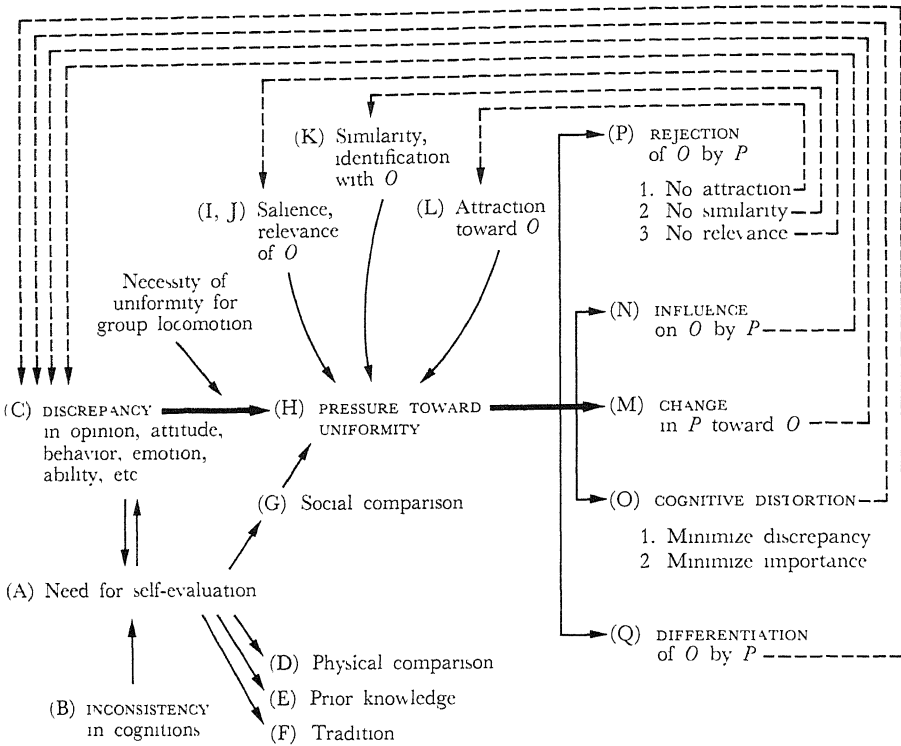


Fig. 9. Diagram of effects of referent influence arising from the discrepancy in opinion, attitude, behavior, emotion, ability, etc., between a person (P) and another person or group (O).

pecially acute. Such would be the case for the inexperienced soldier in combat (Stouffer *et al.*, 1949), or for female subjects who are waiting to participate in an experiment in which they will receive a painful shock (Schachter, 1959). Inconsistency in cognition will also increase need for self-evaluation; for example, a person who is a heavy smoker sees a startling report about health hazards from smoking, or a person who does not believe in "flying saucers" sees an object in the sky which closely resembles such flying objects. Finding oneself in sharp disagreement with the opinion of another whom one respects (C) would be a special case of inconsistency in cognitions which would also increase need for self-evaluation.

A person can often evaluate himself on the basis of other physical evidence which is available to him (D), or on the basis of prior knowledge (E). The strange "flying object" might be explained by recollection of knowledge about the effects of a sunset on cloud formation. Behavior in a situation might also be evaluated against a knowledge of tradition (F)—if one knows the traditions of etiquette, one need not watch one's neighbor at the banquet to determine which is the salad fork.

When physical comparison, prior knowledge, or tradition are insufficient for self-evaluation, social comparison (G) becomes especially important: *P* looks toward *O* as a basis for determining whether *P* is correct. If he finds that *O* (the person or

group against which he is comparing himself) behaves as he does, then P has social support and would be likely to continue the prior pattern with self-assurance. Where discrepancy exists, the need for self-evaluation becomes even greater and P experiences pressures to reduce the discrepancy and establish uniformity with O (H). This pressure toward uniformity, however, occurs only to the degree that one of several conditions is met in the interrelationship between P and O : (1) O must be salient for P with respect to the object in question (I). There are times when a person is so involved in his own problem that he is unaware of the fact that his behavior is discrepant from others', or the opinion of others might not be considered at a given moment. (2) O must have some relevance for the object of disagreement (J). A person may be unconcerned about the fact that the other members of his rowing team differ with him in their choice of Presidential candidate, but the concern would be very great if the disagreement occurred among members of a political club. (3) P must feel some degree of identification with or similarity to O , or at least, the desire for such identification must exist (K). An amateur golfer will not be concerned about the fact that he is not playing golf as well as his partner, if the partner is a professional and a national champion. A Catholic will be more concerned if he is in disagreement with another Catholic on a religious issue than if he is in disagreement with a Protestant. (4) P must be attracted toward O —as indicated earlier, we are more concerned about disagreements with those whom we like (L). To the extent that any of these conditions holds, there will be greater pressure toward uniformity on P .

The greater the pressure toward uniformity, the greater the tendency on the part of P to engage in behaviors or cognitive changes which would reduce that pressure. First, P might change his own behavior or cognition to bring it into line with O (M). If he is successful, then discrepancy (C) is reduced, and with it, pressure toward uniformity. He might also try to persuade O to change toward P (N), which would also reduce discrepancy. If the object of discrepancy is ambiguous enough, P might reduce discrepancy through cognitive distortion—"Our opinions are not really different, it only appears that way superficially"—or he might minimize the importance of the discrepancy (O). Pressure toward uniformity might also be reduced through P 's rejection of O in one of several ways (P): (1) If the basis for pressure was attraction, P might reject O personally—change his attitude toward O from like to dislike. (2) If the basis for pressure was similarity or identification, P might reject O as dissimilar—"He is just a different breed of person from me and can't see things as I see them." (3) P might also decide that the issues on which disagreement occurred might not be relevant to their relationship in the first place. Finally, a device suggested by Fritz Heider (1958) involves a differentiation of O into O_1 and O_2 (Q). The young man, finding that his fiancée has a political view which he rejects, may say, "She is basically a good girl, but somewhere she has been indoctrinated with strange political views, which are not really basic to her personality." Each of these devices, sometimes utilized in combination, would reduce pressure toward uniformity.

There is now considerable evidence to indicate the usefulness of such a conceptualization of "referent influence" in analyses of social pressures on attitudes, beliefs, emotions, and behaviors. Chapters 6, 7, 20, 21, and 32 supplement our brief account.

Students asked to contribute toward a gift for a departing secretary, and who happen to glance at a list of contributions by other students, will give a larger or smaller amount depending on what others have given (Blake and Mouton, 1957).

They will be more likely to sign a petition (Blake and Mouton, 1957), volunteer for an experiment (Rosenbaum and Blake, 1955), or go past a "no trespassing" sign (Freed *et al.*, 1955) if they see others do so. Pedestrians will be more likely to cross the street against a traffic signal if they see someone else do so, but this is particularly true if they can respect the referent person (Lefkowitz, Blake, and Mouton, 1955).

In a series of experiments Schachter (1959, 1965) and others (Gerard, 1963; Gerard and Rabbie, 1961; Sarnoff and Zimbardo, 1961) have demonstrated the less obvious fact that persons placed in unusual and threatening situations look toward others in order to evaluate the appropriateness of their emotional reactions. Siegel and Siegel (1957), in a field experiment involving student dormitory groups, show the effects of identification and desired identification on uniformity in attitudes. Several experiments have demonstrated that there will be greater conformity to a similar person—similar with regard to sex (Bandura, Ross, and Ross, 1961), in terms of previously stated attitudes (Stotland, Zander, and Natsoulas, 1961), or through similar previous experience (Schachter, 1959). The impact of salience of reference groups on conformity has been demonstrated by Kelley (1955), Charters and Newcomb (1952), and Lambert, Libman, and Poser (1960).

Alternative responses to pressure for conformity

Since the model depicted in Fig. 9 specifies a number of alternative responses to a pressure for conformity, it is necessary to specify the conditions under which one will occur rather than the others. In general, given a discrepancy, the person behaves in the manner which is most likely to reduce pressure toward uniformity with the least effort. Where there is a strong positive relationship between two persons, and no clear statement of opinion, there is a tendency to underestimate the extent of disagreement. When the object of discrepancy is ambiguous for *P*, the disagreement is clear, and *P* does not have a great investment in his original position, change in *P*'s position is more likely. Where the change is difficult, for example, where change would result in discrepancy with many other cognitions, then other paths are likely. In a case where unanimous agreement is required, rejection of a deviate member would be unlikely.

Schachter (1951) found that pressures toward uniformity, as represented in behavior of a group toward a deviant member, vary over time. In the early stages of group discussion, highly cohesive groups discussing group-relevant topics communicate more to the deviate than do low-cohesive, nonrelevant groups. Later, the ordering is reversed. As the possibility of changing the deviate decreases, pressure toward uniformity shows itself in greater rejection, in cessation of communication, in personal dislike, and in assignment of the deviate to unpleasant tasks. Emerson (1954) essentially replicated the Schachter experiment with high-school students and obtained similar results, except that he was not able to achieve as high a level of pressure toward uniformity. Although Katz, Libby, and Strodbeck (1964) expected to find different reactions to a deviant department store worker where social-status differentiation was an additional variable, their results appear to be consistent with those obtained by Schachter and by Emerson.

We should remember that pressures toward uniformity *originally* stemming from need for social support cause the group to utilize reward and coercive power against the deviate. Just as Asch's subjects ridiculed the lone deviate, so Schachter's subjects

reject the deviant member and assign him to unpopular positions. It is in this way that the reference group may begin to serve a normative function as well as a comparison function (Kelley, 1952).

Personality factors also appear to determine the mode of reaction to pressures for uniformity. Steiner and Rogers (1963) presented "pairs" of subjects with a "personality test" which included items for which typical responses had been determined. Answers to the items were given aloud, with the experimental accomplice answering atypically. In keeping with the illustration in Fig. 9, subjects, each paired with someone who disagreed with him, were likely to do one of the following: (1) reject the partner, as indicated on a measure of personal evaluation; (2) conform to the response of the partner; (3) underestimate the number of disagreements; or (4) devalue the test, saying that it was not of importance. There was no opportunity to attempt to influence the other by communication. Finally, there were some subjects who did not use any of the four means measured in that experiment—perhaps they would have used "differentiation of O ," if that alternative had been measured. If subjects used one means to reduce pressure toward uniformity, they would not be likely to use another means. Females were less likely than males to reject their partner; this finding is consistent with other studies showing that females have a higher need for affiliation. It also appears that a high level of anxiety is more likely to lead to conformity with females and more likely to result in other means of dissonance reduction among males. The tendency for females to conform and for males to reject the discrepant partner was also found by Steiner (1960).

Several other personality factors are positively related to conformity in noncoercion, nonreward situations: weak ego, poor leadership ability, and authoritarianism (Crutchfield, 1955); ethnocentrism (Malof and Lott, 1962); need for affiliation (Becker and Carroll, 1962); extroversion (Carment and Miles, 1965); low intelligence (Carment and Miles, 1965; Crutchfield, 1955; Tuddenham, 1959); being a firstborn or only child (Becker and Carroll, 1962; Becker, Lerner, and Carroll, 1964, 1966); having harsh, punitive parents (King, 1959; Mussen and Kagan, 1958). An extensive review of this literature is provided by Steiner (1966).

Cultural factors have been related to conformity tendencies in a comparison of French and Norwegian college students who, presented with a task requiring judgment of lengths of tones, found themselves each at variance with a group of five others. Norwegian students were more likely to show conformity; French students were more likely to show rejection, sometimes with strong emotional overtones (Milgram, 1961).

Negative referent influence

Thus far our discussion of referent influence has emphasized uniformity or positive referent influence. It is also true that in many instances referent influence leads to nonuniformity. When P sees himself as dissimilar from O , when he is repelled by O , pressure towards nonuniformity may become as great as pressures toward uniformity under other conditions (Heider, 1958; Newcomb, 1953; Osgood and Tannenbaum, 1955; Peak, 1958). This pattern has been explored theoretically within the context of balance, consistency, congruity, and symmetry theories. Although Burdick and Burnes (1958) did find GSR deflections associated with disagreement with a positively valued experimenter, they also found a tendency to change toward

decreased discrepancy in opinion from a positive communication and increased discrepancy (negative influence) with respect to a disliked source.

Similarly, Osgood and his associates (Osgood, 1960; Osgood, Suci, and Tannenbaum, 1957; Osgood and Tannenbaum, 1955; Tannenbaum, 1956) have demonstrated that a negatively evaluated source produces attitude change opposite to that advocated. A similar assumption is made in the Cartwright and Harary (1956) model discussed earlier (see Fig. 1). The same principle probably operates in political nominating conventions. Raven and Gallo (1965) report that a Presidential candidate becomes more negative in the eyes of Republicans immediately upon his nomination by the Democrats. Similarly, a worker who dislikes his supervisor tends to disagree with the instructions of the supervisor when he can do so privately without fear of punishment (Raven and French, 1958a, 1958b).

Negative referent influence has not been examined as carefully as positive referent influence. It will be interesting to see whether the processes of negative referent influence parallel those processes for positive referent power depicted in Fig. 9.

EXPERT POWER

A number of studies on social influence can fruitfully be reexamined in terms of expert influence. If the experimenter provides a task or a series of trials at which one person or a group will be successful, then that person or group will have expert influence over the subject in later trials, particularly if the later trials or tasks require similar competence (Allen and Crutchfield, 1963; Di Vesta, 1959; Di Vesta, Meyer, and Mills, 1964; Hollander, 1960; Jones, Wells, and Torrey, 1958; Kidd and Campbell, 1955; Lanzetta and Kanareff, 1959; Mausner, 1954a, 1954b). Expert influence of others will operate more readily if the task is difficult, complex, or highly ambiguous (Coleman, Blake, and Mouton, 1958; Luchins, 1945). The structure of the task will sometimes lead to "information dependence" of one group member upon another (Jones and Gerard, 1967; Kelley, 1967; see also Chapter 29 of this *Handbook*). If *P*'s self-confidence is lowered through failure experiences or verbal induction, he will be more apt to attribute superior knowledge to *O*, and will therefore be more likely to conform (Cox and Bauer, 1964; Gollob and Dittes, 1965; Hochbaum, 1954).

The domain of expert influence is likely to be somewhat limited to the area in which *O* has expert knowledge—although several investigators report generalization. Brim (1954) reports that a physician's recommendation on child rearing, which is not strictly within the domain of medicine, would be followed more by mothers who respected his superior knowledge in the field of medicine than by those who did not recognize this superiority. Allen and Crutchfield (1963), having established the expert power of the group through authoritative confirmation, found a considerable tendency for *P* to generalize expertness to other nonreinforced areas. Female subjects were especially likely to generalize. French and Snyder (1959) report generality of influence of military officers for enlisted men to problems of perceptual judgment.

A knowledgeable person may not be credible if he may gain from misleading the person whom he wishes to influence, or if the "expert's" knowledge is tempered by bias. That influence is related to perceived credibility or trustworthiness of the communicator has been demonstrated in several studies (Hovland and Weiss, 1952; Kelman and Hovland, 1953; Osgood and Tannenbaum, 1955). Similarly, Beal and

Rogers (1959) found that, while farmers tended to respect the knowledge of scientists working for commercial concerns, they placed greater credibility in scientists who were working for the government. Negative expert influence may result if the *O* is seen as purposely attempting to use his superior knowledge to mislead *P*. The "boomerang effect" can be explained in such terms (Hovland, Lumsdaine, and Sheffield, 1949; Kelman and Hovland, 1953).

A comparison of reward-coercion, expertness, and reference as basis for influence

In a study by Kelman (1958), freshmen in an all-Negro college were presented with a tape-recorded communication which advocated that, in the interest of maintenance of Negro culture, some all-Negro colleges should be maintained even after all other universities are desegregated—a position at variance with that held by the students. Different groups of subjects heard the same communication, but attributed to different communicators. In a condition which combined reward and coercive power, the communicator was identified as a very powerful president of a Foundation for Negro Colleges, who would tend to support the college and the students who agreed with him and effectively punish those who disagreed with him. In the reward-coercion condition, students' attitudes changed toward the communicator, but only when they were informed that their responses on the questionnaire would be seen by him. Thus, public dependent influence ("compliance") had resulted. Other students heard the same communication, this time attributed to a referent power: a Senior and president of the student council in a leading Negro university who also represented the opinions of most Negro college students. Referent influence ("identification") led to significant attitude change which was equally great regardless of whether the questionnaires would be seen by the agent. In an expert-power condition, the communicator was introduced as a professor of history, with considerable knowledge about minority groups and the Negro community. In that case, influence was great regardless of whether observability was possible, and continued on a high level for weeks thereafter (Kelman calls this "internalization").

Some early studies attempted to compare the relative effectiveness of expert power and referent (majority) power in inducing change in opinion (Burt and Falkenburg, 1941; Marple, 1933; Moore, 1921). Since we are dealing with power along two different dimensions, it is difficult to know how much superior knowledge a person must have in order for his expert power to be equal to the strength of referent power in a majority of 20. The comparison is further complicated by the fact that, within limits, the majority might assume expertness by virtue of its numbers. Nor does similarity of *P* to *O* unequivocally lead to increased reference and decreased expertness. Brock (1965) found that a salesman in a retail store would have more influence over the purchaser's selection of paint if he reported to the prospective purchaser that his consumption of paint was similar to that of the purchaser. Having a similar relationship to the object, Brock suggests, leads to greater identification or social comparison. Though this looks like referent influence on the surface, it is also reasonable to conclude that the purchaser sees the salesman as most expert if (1) he has had sufficient experience with paint and (2) he can apply this superior knowledge to a problem which is specific to the purchaser.

The relation between expertness and reference, despite the methodological problems in comparison, is an intriguing one. Expertness would increase as *O* deviates

from *P* in the direction of greater knowledge or ability. Referent influence appears, with some qualification, to be more likely to occur if *O* is seen as not too discrepant from *P*. When, then, would an increase in *O*'s knowledge increase his influence, and when would it decrease his influence?

Raven, Mansson, and Anthony (1962) have attempted to answer this question with an experiment on social influence on extrasensory perception. In this experiment, each female subject learned that three other subjects reported receiving an extrasensory image. In one condition, the three others were presented as superior in perceptual ability, in a second condition, the others were about average; in a third condition, the others were presented as being very low in perceptual ability. Reported reception was greatest when the others had "average" ability. However, belief in extrasensory perception was greatest after finding that the others were superior in ability.

This discrepancy between public and private response measures illustrates the interdependence of sources of influence. An increase in *referent influence* decreases *expert influence* and vice versa. While some teachers adopt a policy of close and friendly association with students (which might increase *referent influence*), others are concerned that affiliation would undermine their expertness ("familiarity breeds contempt," they say). Is it not also possible that a religious minister who denounces racial prejudice from the pulpit may exercise *expert influence* on beliefs about morality, but have no effect on behavior because he is seen as too dissimilar? His parishioners would agree that prejudice is wrong, but yet feel no uneasiness about the fact that they cannot control their basic impulses as effectively as does their superior minister.

LEGITIMATE POWER

The fact that the group may be a *legitimizing agent*, designating its leader by a formal vote, has been established in studies by Raven and French (1958a, 1958b) and Goldman and Fraas (1965). Of course, for such legitimizing to occur, the group members must accept the group's authority to bestow legitimacy. Raven and French (1958a, 1958b), for instance, told their subjects that a leader was necessary in order to accomplish the task (legitimate power of the experimenter) and that other groups, after considerable deliberation, had found an election procedure appropriate (referent power). Raven and French (1958a, 1958b) pointed out that, while the non-legitimate leader who uses coercion will be able to influence the group members only at the public level, surveillance is not necessary for legitimate power. French and Raven (1959) further suggested that coercion coupled with nonlegitimate influence will lead to negative influence at the private level, even though there may be conformity at the public level.

Expertise may be a basis for establishing and limiting legitimacy. Evan and Zelditch (1961) found more covert disobedience to technical rules and commands from a supervisor if he was seen as having an inadequate level of knowledge. They suggest that obedience varied with the extent to which the workers believed that "the supervisor had a right to occupy his office." Thus there may be some correlation between expert and legitimate power, though legitimate power should often obtain even when there is no superiority in knowledge on the part of *O*. Military organizations, for instance, could not operate effectively if subordinates could disobey their superiors whenever they questioned the wisdom behind a military decision.

Legitimate power and dependence

Recently, Berkowitz and his coworkers have conducted experiments which indicate that persons will perform acts on the basis of the needs of others, if they see others as dependent on them (Berkowitz and Daniels, 1963, 1964; Berkowitz, Klanderman, and Harris, 1964; Daniels and Berkowitz, 1963; Goranson and Berkowitz, 1966). Such conformity behaviors seem paradoxical when viewed in light of the usual power conception. It appears that a person who has little power can emphasize his powerlessness as a means of influencing a person with high power. Yet such "power of the powerless" would not seem unusual to the intelligent layman who is accustomed to the role of the "helpless female." Schopler and Bateson (1965) have considered such influence within the context of social power. We would see the "power of dependence" as being a form of legitimate power, since it clearly involves the acceptance of an influence role relationship. Social responsibility—specifically, helping the helpless—is an important norm in our culture; when it is violated, as it often is, the failure to help a person in need becomes a topic for extensive breast-beating on our editorial pages.

The conditions under which power of dependence occurs are still being examined. Schopler and Bateson find that females are more likely than males to respond to the social-responsibility norm (1965). A follow-up study indicated that the tendency of the powerful to assist the powerless is greater if the powerful person sees the helpless one as being in that position as a result of environmental factors beyond his control, rather than personality or behavioral defects (Schopler and Matthews, 1965). Consistent with Gouldner's (1960) "reciprocity norm," Goranson and Berkowitz (1966) and Berkowitz and Daniels (1964) found that past help from the dependent person leads to greater assistance from the powerful person. At this point it is not clear whether this is due to expectation of future assistance or to a feeling of obligation for past help.

Legitimate power of the experimenter

Frank (1944a, 1944b, 1944c), in a series of experiments, observed that college students who volunteered their services as subjects in experiments would go to great lengths to follow the requests of the experimenter. Frank indicated astonishment at the number of dry soda crackers subjects would consume merely on the basis of implied commitment as subjects. Block and Block (1952) found similar compliance in meaningless spool-packing behavior. Orne (1962) attempted to test the limits of compliance by requesting subjects to engage in psychologically noxious, meaningless, and boring tasks such as filling sheets of paper with random digits, to grasp a dangerous reptile, to plunge their hands into acid, and to throw acid at an assistant (Orne and Evans, 1965). Again, the extent of compliance was surprising. In Milgram's (1963) experiments, the subjects administered what they assumed to be a dangerously high shock to another subject at the request of the experimenter. Milgram found that conformity to the experimenter may be increased if two confederates encourage the subject to administer a higher shock (1964) and decreased if the confederates oppose the shock (1965a). There is also evidence that the degree of compliance decreases as the subject is brought into close contact with the person who is supposedly receiving the shock (1965b). In addition, subjects appear to feel obliged to give the exper-

imenter the type of behavior and results he wants ("Did my behavior demonstrate what the experiment is designed to show?") (Orne, 1962). Rosenthal (1963), on the basis of his own research on experimenter bias, suggests that much of the research in psychology should be reexamined in this light.

INFORMATIONAL POWER

Often, the influence of *O* on *P* depends not so much on their social relationship as on the specific content of the communication, the information or new cognition which is transmitted. For clear examples of informational influence, let us consider those experiments where subjects are presented with ambiguous images or reversible figure-ground objects, such that the observer's set will lead him to see a vase but not the two faces, the pirate but not the rabbit (Leeper, 1935). Once the alternative perceptual organization is pointed out to *P* by *O*, he will see it, and indeed could not see it otherwise if he wished. The changed perception is now independent of the influencing agent and might persist long after the source is forgotten. The mathematics teacher who is able to point out the logic of mathematics and the orator who provides convincing arguments for his point would be additional instances of informational influence. Since the new cognitive organization is now dependent not on *O* but on *P*'s own cognitive system, informational influence is likely to be more stable and persistent than other forms of influence.

In previous sections, we observed that what has been called a boomerang effect could be explained in terms of negative expert or negative referent influence: the negative power of the communicator is greater than the positive effects of the communication; the net change in opinion is the resultant effect of the two opposing forces. If it is true that informational influence, being independent of *O*, is more stable than expert influence, then we would expect to find that the positive effects of the communication would show themselves at a later time. Hovland and Weiss (1952) found evidence of such a "sleeping effect." Going one step further, Kelman and Hovland (1953) report that by reinstating a negative communicator at a later time (reminding subjects of the source of the communication) the negative expert influence will be restored. The effects of a positive communicator can be restored in a similar fashion.

Asch (1948) argues that much of what has been called "prestige suggestion" is really cognitive restructuring. The perception of the object changes if it is associated with a given source. Flament (1958) offers some additional evidence on this point, dealing particularly with situations where the stimulus is ambiguous enough to allow for restructuring. McDavid (1959) reports individual differences, with some subjects being "source-oriented," affected more by the nature of the communicator, while others were "message-oriented" or subject to informational influence.

We have curtailed our discussion of the factors which make for more effective informational influence, since these are reviewed elsewhere (Chapters 21 and 38).

SECONDARY EFFECTS OF SOCIAL INFLUENCE

Our emphasis has been on the primary effects of social influence. Recently, a number of investigations have focused on the secondary or indirect effects of influence or attempted influence. Coercion and reward, which initially lead to public dependent change with *P* relating his changed behavior to *O*, may secondarily lead to indepen-

dent change, with surveillance becoming irrelevant. Similarly, the changes which result from legitimacy, reference, and expertness may become independent. There are several ways in which such secondary changes can occur.

1. *New perceptions resulting from locomotion.* A changed pattern of behavior, regardless of the basis of change, often brings with it new perceptions and cognitions. A parent may bribe his reluctant child to practice the piano in hope that, eventually, as the child discovers the pleasures of music, playing the piano will become intrinsically rewarding. G. W. Allport used the term "functional autonomy" to refer to such change in motivation. A restaurateur is opposed to serving Negroes in his restaurant, since he honestly believes that he will lose his other customers in such an event. When an accommodation law is passed, he complies because of threat of fine (coercion) or respect for the law (legitimacy). Later, when he finds that his business has not suffered, he changes his attitude and responds more favorably. Raven (1959) suggests a somewhat more complex pattern of change resulting from locomotion, citing as an example the Sims and Patrick (1936) finding that Northern students, while attending Southern universities, adopt the racial prejudices common to the Southerners. It may be that initially the Northern student, finding his views at variance with those of others, restricts what he says for fear of being rejected (personal coercion) and begins to say the "proper" things for which he will receive greater acceptance and approval (personal reward). He then becomes more sensitized, in his reading, his observations, and his memory, to cognitive items which he can readily express—in other words, information which is consistent with the views of his new friends. There will come a point where the number of cognitive items supporting the opinion of the others is greater than the number supporting his original views and there is a clear rationale for change. Janis and King similarly observe that, when a debater takes a position opposed to the one he believes, he may be presenting convincing counterattitudinal arguments to himself while attempting to persuade others (Elms and Janis, 1965; Janis and King, 1954; King and Janis, 1956).

2. *Dissonance resulting from social influence.* Cognitive dissonance theory (Brehm and Cohen, 1962; Festinger, 1957) offers an alternative explanation to the findings that private acceptance sometimes follows forced compliance. Since the extensive research on forced compliance is reviewed in Chapter 21 and in Collins (in press), we will not attempt a full coverage here. The essential point is that persons strive toward consistency. Tensions are experienced if behavior is inconsistent with beliefs or attitudes, and there will be tendencies to reduce such inconsistency or dissonance. If a child is committed to an unpleasant act (such as eating a disliked vegetable) as the result of the experimenter's inducement (legitimacy, personal reward, or personal coercion), the child will later rate the vegetable as more pleasant (Brehm, 1959). He will also be more likely to believe communications about the positive food value of the disliked vegetable, the more he is committed to eating it (Brehm, 1960).

The dissonance-theory approach to private acceptance after public compliance posits an interesting relationship between amount of reward or punishment and private change. If the promised reward or threatened punishment is very high, then compliance (public dependent influence) will occur without private acceptance. There is no dissonance, since the high reward or punishment provides sufficient basis for the inconsistency between belief or attitude and behavior. If reward or punishment is very low, there will be no compliance and no dissonance. If the reward or

punishment is just great enough to bring about change in behavior, there will be conflict before the decision to comply, and dissonance afterward. A number of experiments have been presented as supporting the dissonance interpretation of forced compliance. Other studies (detailed above) suggest other explanations, such as credulity toward the experimenter or exposure to new information after compliance.

3. *One power source affecting another.* As was indicated above, the use of coercion leads to personal rejection of the influencing agent, while the use of reward increases the attractiveness of the agent in the eyes of the influencee. In the latter case, positive referent influence increases as the result of reward. In the former case, negative referent influence occurs, even with public compliance, and leads to negative change at the private level. A supervisor who uses coercive power to influence his workers to slow down to an uncomfortable rate of operation, on pain of a fine, will obtain public dependent influence, but the workers will personally reject the supervisor and will privately be even more vehement in their belief that they should operate more quickly and less accurately (Raven and French, 1958). This negative change will show itself when the supervisor leaves the room.

4. *Indirect influence through changing the influencing agent.* In most of the experiments on group effects, the actual source of social power is the experimenter. It is he who gives a false group consensus to the individual subject, tells him, correctly or incorrectly, the opinions of an expert or reference group, or assigns one person legitimate authority over others. Lewin (1947) observed that it is sometimes easier to promote change in a group through group decisions than through approaching each member of the group individually. The reason for this is that the person's group has referent and often coercive, reward, and legitimate power over the individual. Those persons who are persuaded by external rewards or by persuasion to deviate from the group norm are often subject to strong pressure to bring their behaviors, beliefs, or attitudes into line with the others'. For example, Coch and French (1948) and Roethlisberger and Dickson (1939) describe the effects of group pressure on a worker in a factory who increased her production above the norm. Thus, Lewin suggested a process of "unfreezing" of a group norm, change, and "refreezing" at a different level. This, it seemed, could be accomplished by group discussion and group decision with encouragement from a discussion leader. The first studies involved persuading housewives to purchase and prepare meats, such as sweetbreads, which are unpopular in our culture. The purpose of the study was to change meat-eating habits to help alleviate a meat shortage during wartime. The group decisions were indeed effective, at least in promoting changes in meat purchases shortly after the decisions were made. This led to a number of studies on the effects of group decisions in getting mothers to give their children orange juice and cod-liver oil (Radke and Klsurich, 1947), in encouraging college students to eat more whole wheat bread (Willerman, 1943), in getting workers to increase their rate of productivity (Coch and French, 1948; Lewin, 1951), and in getting students to volunteer for experiments (Schachter and Hall, 1952).

Bennett (1955), in a more careful experimental analysis of factors involved in group-decision effects, concludes that it is not the group involvement and participation which are important so much as the clear establishment of a group norm *per se*, through perceived consensus in the group. Pennington, Haravey, and Bass (1958) have disputed this finding, reporting that the discussions were indeed an important

factor. Perhaps an important difference between their study and Bennett's is the fact that Bennett's study involved group decision about individual actions (volunteering for an experiment), whereas in the Pennington, Haravey, and Bass study the decision determined the behavior of the group as a whole.

The Coch and French (1948) study, involving group participation in decisions about rate of production in a pajama factory, has been widely cited. Coch and French found that the greater the involvement of the workers in decision making about production rates, the greater the level of production. An attempt at replication in a Norwegian factory (French, Israel, and As, 1960) did not show the differences that had been expected. One explanation involves the concept of legitimacy, as cited above. It appears that the Norwegian workers did not accept fully the legitimate power of the group to make production-rate decisions.

MULTIPLE SOURCES OF POWER

Though it is useful to consider each source of power separately, it is seldom that only one source of power is operative at a given time. Usually, various combinations of power are involved in one influence situation, and, as indicated above, these operate in a nonadditive, interactive relationship. If expertness is emphasized, reference may be reduced; if coercion is used, personal reward and reference will be diminished; if reference is emphasized, expertness may be lost.

Often the influencing agent has a choice as to which source of power he will utilize. The doctor may stress his legitimate role as doctor and insist that the patient must obey his doctor; he may try to speak his patient's language and establish a friendly relationship with him, thus exerting referent influence; he may emphasize his training, line his office with medical books, journals, and diplomas, in order to establish his expert power; he may use approval and disapproval as personal reward and personal coercion, or, impersonally, threaten the patient with loss of medical compensation where such resources are available to him; or he may use informational influence by carefully explaining to the patient the nature of his illness and the reason for prescribed exercises or medication. The question then arises as to which is most effective. This in turn begs the prior question of criteria of effectiveness—immediate maximal compliance, long-term compliance, or compliance with little additional involvement of the influencing agent?

The agent would want to be certain that his choice of power is within his domain. The utilization of power which is not within his domain would hamper later influence attempts. The doctor would not attempt expert influence if his patient happened to be another doctor whose training was equivalent. In that event, he might fall back on legitimacy or information.

Private influence would seem less costly than public dependent influence, since it does not require continual surveillance and the resources which are necessary for reward and punishment. It is no wonder that innumerable figures in history, having assumed political power by force, go to great lengths to establish their legitimacy by carefully tracing their regal lineage or by rigged elections.

Informational influence appears to be the most stable, and fits into our modern-day value system regarding individual freedom of choice. For that reason it has received considerable stress in modern educational circles. However, we should bear in mind that informational influence, while *socially* independent, is still dependent

on other elements in the cognitive structure of the influencee. In the earlier stages of a calculus course, it might be necessary for the teacher to use expert power, asking the students to memorize certain formulas on the basis of the teacher's superior knowledge—understanding the bases for these formulas may not come until much later. Military organizations, realizing that the press of battle might lead to catastrophe if the soldier were to demand a complete explanation of a command, insist on legitimate power over informational power ("Ours is not to reason why . . ."), and keep coercive power in the background, just in case.

Coercive power and manipulation both run sharply counter to our value system, yet where change is crucial, as would probably be the case with respect to civil rights, and where all other sources have not proven effective, there may be no alternative. In that case, it would be well to consider that, if we also wish to obtain secondary independent change, we should utilize a degree of coercion which is sufficient to bring about compliance, since that would be most likely to bring about dissonance after compliance and subsequent change in attitude (Festinger, 1957).

As we have seen above, personality and cultural factors also enter into the effectiveness of the source of influence. Minton (1968) reviews personality factors in social influence in accordance with the taxonomy of power presented here. Clearly, more research is needed regarding the interaction between influencing agent, cultural factors, personality of the recipient of influence, and situational factors as these determine the effectiveness of different types of influence.

CONCLUDING REMARKS

In this chapter, we set ourselves the task of reviewing the literature on the psychological aspects of group structure. As must have been the case for all the authors in this *Handbook*, we were surprised and overwhelmed by the size and varied content of the literature we had promised to review. McGrath and Altman (1966) have plotted the number of publications on small groups over time as part of their especially ambitious attempt to examine all studies of group behavior. They note very few studies before 1910, but thereafter a rapidly accelerating *J*-curve. The number of items has increased tenfold during the 1950's and our own observations indicate no slackening of pace in the 1960's.

We were thus faced with the problem of classification, organization, and codification. Riecken and Homans, in their chapter on "Psychological Aspects of Social Structure" in the first edition of this *Handbook* (1954), emphasized the need for taking stock of what we already have. They "strongly believe that progress in the study of small groups will be made just as rapidly through this process of codification as through the multiplication of empirical research" (p. 829). There have been some attempts in this direction, notably by Thibaut and Kelley (1959), Homans (1961), Hare (1962), Collins and Guetzkow (1964), and McGrath and Altman (1966), and in the series of papers in *Advances in Experimental Social Psychology* edited by Berkowitz (1964, 1965). However, we were unable to devise a theoretical system which would encompass even a small percentage of the studies we felt competent to discuss. We often could not discuss the empirical studies under the same organizational framework used to discuss the theoretical models!

The result is a compromise strained on both ends. We tried to develop an outline that would provide at least topical headlines for the studies reviewed. Thus we began with various theoretical models of group structure and then focused on the structural aspects of interpersonal attraction, coalitions, communication nets, and power. In each case we tried to focus on the structural character of these variables—how they act as independent variables in small groups. Even though we had adopted this relatively unstructured approach to structure, we found ourselves left with a large number of studies which we hoped to include in our review, but which somehow did not fit into our organizational scheme. Some of these we excluded, hoping that they would be covered in various contexts elsewhere in the *Handbook*. We were unable to examine fully the literature on group size and group structure, the development of structure, leadership, personality variables, the analysis of morale and satisfaction as a dependent variable related to group structure, and other topics included in our original outline. Furthermore, we had to restrict our impulses to mention additional important studies which suggested themselves on each rereading of the manuscript. Eventually, perhaps, an all-encompassing system of codification will be developed which will allow for a complete organization of studies of group structure. Unfortunately, no such system is available to us at this writing.

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Leadership

CECIL A. GIBB, Australian National University

Though it may be true, as one writer has claimed, that in 1896 the Congressional Library had no book on leadership, it is not true that interest in this aspect of society is a recent phenomenon. Almost every influential thinker from Confucius to Bertrand Russell has attempted some analysis of the differential exercise of power of individuals over one another, which characterizes all social life. But it is true that social psychology, sociology, and indeed, other social sciences too have made more intensive efforts in the post-World War II period to obtain a scientific understanding of leader behavior. It is upon these analyses—observational and experimental—that this chapter is based.

Contemporary interest in the phenomena and problems of leadership remains as strong as ever, despite the fact that a very considerable body of research produced since the period of the Second World War has indicated the great complexity of the area and has given many reasons to believe progress will best be made by using simpler and less multidimensional concepts. Leadership is still commonly thought of in terms of personal qualities which would generally be identified as the principal human virtues as characterized by the society in which this thinking occurs. It is still widely believed that the manifestation of leadership in one set of circumstances (for example, the Army) gives a guarantee of leadership skills readily adaptable to other circumstances (for example, business and politics). Research reviewed in this chapter will suggest quite forcibly that this is not the case, but that, rather, there is value in a newer, alternative idea of leadership as a set of group functions which must occur in any group if it is to behave effectively to satisfy the needs of its members. This conceptual approach has focused attention on the nature and distribution of the behavior by which these functions are performed. In recent years a more sophisticated psychology of leadership has examined, with considerable care, these behaviors and the personal, environmental, and social situational variables associated with them.

DEFINITIONS

Within this chapter, three key terms seem to call for some precursory definition. These are *group*, *leader*, and *leader behavior*.

DEFINITION OF THE GROUP

The term *group* is so well known that none of us would ordinarily turn to a dictionary to discover its meaning. But any person who asks a class of students to define and give examples of groups will discover that the term by no means has an unequivocal connotation. On the one hand, the word is used to refer to varied relations between objects; on the other, it embraces organizations of such different levels of complexity that it seems incredible that a common set of concepts and methods of study could be applicable to them. In consideration of this first source of confusion, one may point to at least three types of relation frequently denoted by the term "group."

1. Objects (or persons) which are, in some sense, together (for example, together in a certain place or together in the mind of the observer) are frequently said to be grouped or to constitute a group. In this chapter, however, such togetherness will be named an *aggregate* or a *collection*, and it will be differentiated from a *group*. Units of an aggregate are characterized by complete independence of one another. It is true, of course, that the aggregate would disappear if all the units were taken away, but no unit of the aggregate is changed by its nearness to other units. Also, as Asch pointed out (1952, p. 259), "their order is of no consequence." Whether any human aggregates actually exist may, of course, be doubted. There is evidence to suggest that mere awareness of the presence of others changes individuals' behavior in many ways, thus implying an interaction among the units which negates the term "aggregate" or "collection." In any case, aggregations are of little or no importance to the social scientist, since they exclude the facts of interrelation.

2. A group might also be defined as a collection of units having qualities in common. Some aggregates may be homogeneous in some respect and through the perception of this homogeneity they will constitute classes. A heterogeneous pile of objects on a bargain counter may, perhaps, be used to illustrate an aggregate. A similar pile of magazines on a nearby counter, however, is different, in that every unit here is a member of a class of things. In this case every unit embodies, in some particular manner, the nature of the class in question. While every book belongs to the aggregate we call a pile, it also belongs to the class of things called magazines. The particular pile is a sample of this class of things. Social groups conforming to this concept would be collections of individuals who are perceived to have common characteristics. For example, those who earn more than some arbitrary number of dollars per year may be said to constitute an economic class; those who are accepted into certain prescribed company may be said to form a social class. "One can say of this type of group also, that it excludes the fact of interaction; the members are what they are with no living relation between them, with no contact or even proximity" (Asch, 1952, p. 260). For these reasons the class also has little interest for the psychologist concerned with organization and leadership. Without interaction, neither of these phenomena can appear.

3. There is a third type of relation between objects (including persons) for which the term *group* is more properly used. A group is characterized by the interaction of its members, in such a way that each unit is changed by its group membership and each would be likely to undergo a change as a result of changes in the group. In this case there is a dependence of each member upon the entire group, and the relation between any two members is a function of the relation between other members. An aggregate of persons thus becomes a human group when interaction occurs among the units comprising it.

While the concept of interaction between members may serve to differentiate the group from the aggregate, it is not, by itself, a satisfactory definition of the group. We shall do well to examine briefly some of the attempts which have been made at definition. Sociologists and social psychologists have frequently tried to reduce to a minimum the criteria of a functional group.

Group definition in terms of interdependence of members. Such a definition has been offered by Kurt Lewin (1939) and others. For Lewin, interdependence of members was the criterion of a group, as it was of any unitary whole. He pointed out that many scientists define groups in terms of similarity of members, and that this was, in fact, the case, whether the primary emphasis was on similarity of attitudes, or equality of goal, or equality of an enemy, or a feeling of loyalty. It was admitted, of course, that those similarities could be found in association with, and might be the cause of, a certain interdependence of the persons who show them.

Definition of the group as an instrument of satisfaction of individual needs. R. B. Cattell (1951, p. 169) has suggested that the definition of a group in terms of "internal interaction" of individuals seems less fundamental than a definition in terms of goals. "Our definition of a group is: 'an aggregate of organisms in which the existence of all is utilized for the satisfaction of some needs of each'." This is probably the most basic and broadest definition of the group yet put forward. It embraces groups of all kinds, both primary and secondary.

A working definition. Proshansky and Seidenberg (1965) have recently suggested that "most social psychologists use the term [group] to refer to two or more individuals who can be collectively characterized as follows: they share a common set of norms, beliefs and values and they exist in implicitly or explicitly defined relationships to one another such that the behavior of each has consequences for the others. These properties in turn emerge from and have consequences for the interaction of individuals who are similarly motivated with respect to some specific objective or goal" (p. 377).

Specific mention is made here of common purposes or goals, and there can be little question that some common goals are a necessary condition for the existence of a functional group, and that these goals must be such as to give satisfaction to needs of the individual members who participate in the group. Interaction between members is made part of the definition rather than left as an implied consequence of group formation. It is impossible to conceive of a functional group without interaction and interdependence of members. Organization or *structure-in-interaction*, on the other hand, is not required as a defining characteristic of the concept of

"functional group," however generally groups reveal structure in interaction. Nevertheless, the almost inevitable development of organization should not be overlooked. Znaniecki has pointed to the emergence of group institutions as one of the basic processes of group formation. Of this he wrote (1939, p. 809):

In the beginning of the process of group formation those activities which make it a cultural product are experienced as spontaneous performances of voluntarily cooperating individuals. But as the group is formed and its makers become its members, such activities are normatively standardized and systematized until they come to be regarded as group institutions, the whole system of which constitutes the dynamic organization of the group. The function of each member consists in his obligatory active participation in group institutions; functions vary for the different categories of members.

Definition in this form has the virtue of handling some situations which have presented difficulty to earlier schemes. For example, one may ask how, in terms of definition, it is possible to handle four persons playing a tennis doubles match. Is this one functional group or two? It is possible to say that all have a common purpose: to reach a definitive end of their struggle. On the other hand, it is clear that here there are, at the same time, one group and two. There can be no doubt that there is interaction among all four, and that the behavior of each has consequences for the others, and even that all are utilized in the satisfaction of some needs of each. However, both quantitatively and qualitatively the interaction between partners differs from that between opponents. Here, at least, lies a basis for differentiation of the groups which will be dependent on the purpose for which the groups are being studied or defined.

The problem of unitary versus segmentary groups. This problem is not of purely academic interest. Stice has drawn the writer's attention to just such a problem in the study of air crews in which, for some purposes, it seems profitable to consider an entire crew as a single group, while, for other purposes, the crew is to be seen as a number of segmentary groups (for example, as a flight team, a bombing team, a defensive team, and so on). As is usual in real-life situations, this question is complicated by the fact that these teams overlap in membership and a crew in action may be seen as a number of segmentary groups which are constantly forming and reforming as the external situation changes. Similar problems are common in the industrial setting. The now famous Bank-Wiring Observation Room of the Hawthorne Western Electric Plant may best be regarded as a unitary group for the study of some of its behavior, but it can only be fully understood when the clique (segmentary group) formation within it has been observed and examined.

Of the air-crew segmentary groups or teams Stice, in a personal communication, wrote:

They are groups that interact with other members of the aggregation certainly, and their members may at other times—or even simultaneously but for other purposes—be a part of others of these overlapping groups. As far as definition and experimental treatment are concerned, the advantage here is that once a goal has been established the group can be reasonably well defined, and its organization and customs can be described with some reliability.

Group as a quantitative concept One final characteristic of this conception of a functional group is that it is basically a quantitative concept, since interaction or interdependence is a quantitative variable. Furthermore, investment of individual energies, in the group is not an all-or-nothing phenomenon, however difficult it may be to measure this variable with currently available techniques. French (1944) and others have pointed out that definition in terms of interdependence implies other relationships also. For example, for French, identification of members with the group is implied and this, in turn, is a quantitative variable affording a valuable index to degree of group development or group unity. Further, Cooley's "we-feeling" is a quantitative concept, since estimates of its strength may be obtained. In like fashion, many other indices of group quality or strength have been developed (*cf.* Collins and Raven in Chapter 30).

Organization. Some writers emphasize the fact that the emergence of leadership is synonymous with differentiation of individual roles within the group. A group in which the members are differentiated as to their responsibilities for the task of approaching the group goal is commonly called an *organization*. Znaniecki (1945) pointed out that it may frequently be difficult to determine whether any particular collection of organisms constitutes a group, and that it may also be difficult at times to determine whether a particular group can be regarded as an organization. This is especially true of work with traditionless laboratory groups. In these groups the emergence of structure or organization can be observed, as can the relations of influence or leadership among the members. It is questionable, however, to refer to these groups as organizations, though they might be regarded as incipient organizations. This is the position of Stogdill, who wrote (1950, p. 3):

A group may or may not have leaders. If it does have leaders, it is an organization, for at least some of the members are thereby differentiated from the others as to responsibility, or role expectation in relation to some common purpose. The members of a group may or may not have mutual responsibilities for a common task. If the members do have differentiated responsibilities in relation to common goals then the group is an organization—a particular kind of group. The continued presence of leaders and of responsibility differentiations in relation to group goals are indicative of organization. It may not always be easy to determine the exact point at which a group emerges into an organization.

Despite the advantages Stogdill sees in discussing leadership only as a facet of organization, this represents an unnecessary restriction on the concept of leadership and has no operational advantage in research. If it is recognized that groups vary with respect to a factor or dimension of organization, measurements of organization may be made and related to observations of leader behavior. It has long been claimed, as Sherif (1948) has said so clearly, that all groups are characterized to some degree by hierarchical structure or organization. As Znaniecki (1945) indicated, however, this can be realized only in a lasting "social group" or "association." In laboratory groups no persistent structure may be present during the early hours of common action but, with respect to any particular task, there is differentiation of roles or "structure" which may be regarded, as suggested above, as incipient organization. Organization, of course, may take many more complex forms than the differentiation of an influence hierarchy. But there can be no real objection to talking

about organization leadership rather than group leadership if one so desires, and this is frequently done.

DEFINITION OF THE LEADER

Whenever two or more persons constitute a group, the relation of leadership and followership soon becomes evident. It is equally evident, however, that this relationship does not necessarily take, persistently and continuously, the same direction. Everyone has known friendships in which one of the friends was persistently the leader while the other willingly followed. But one can also recall friendships in which now one friend and now the other assumed the role of leader. This same reversibility of the leader-follower relation is frequently observable in the marital group. Indeed, every group differs from every other in the details of this relation; and these differences depend on individual and relative differences in the endowment of members of the group, as well as on the cultural tradition within which the group is functioning. Thus a husband who is, by profession, an interior decorator may assume leadership in the decoration of his family home. The working wife whose income exceeds that of her husband may determine the residential location of the family. But, paradoxically, the culture confers the possibility of leadership, in each of these cases, on that group member who would ordinarily be a follower. A moment's thought about the relative freedom to lead enjoyed by the American, the British, the German, and the Arabian wife will serve to illustrate clearly this fact.

The leader as an individual in a given office. The "popular" answer to the question: "Who is the leader?" suggests that whoever occupies a leader's office is a leader. Shartle and Stogdill (1952) adopted this as an initial definition to guide the Ohio State University studies in naval leadership. They began by assuming that "persons who occupy positions which are commonly presumed to demand leadership ability are proper and likely subjects for the study of leadership" (p. 6). Such a convenient starting point for their investigations is made possible largely by the high degree of organization in the groups they proposed to study. When studies are made in less structured, traditionless groups, there often is no leader office upon which attention can be focused. However naive it may be to assert that the leader of an army is its general, of a team its captain, of a business organization its president, and so on, it cannot be denied that this is one place to start the study of leadership. As analysis proceeds, however, it becomes clear that such a definition of the leader embraces so wide a variety of relationships as to be of little scientific value. More analytic definitions of the leader must be employed.

The leader as focus for the behavior of group members. A quite different approach, based on the work of Freud (1922), was made by Redl (1942). If leadership is regarded as a relation, then the types of leadership generally identified should be recognizable as expressions of different kinds of relationship. Redl introduced the concept of "central person" and distinguished ten different types of emotional relationship between the central person and other group members. Redl used the term "leader" for only one type of relation, giving different names to the other types. The term leader was restricted to that relationship which was characterized by love of the members for the central person, leading to incorporation of the personality of the central person in the ego ideal of the followers (that is, they wish to become the kind of person he is). This definition is far removed from our usual conception of

the leader, as represented by Shartle and Stogdill, and even from the analytic conceptions we shall next discuss. It is a highly restrictive definition of the leader, but it does use as its differentiating characteristic the nature of the emotional relationship between the leader and other group members and, in so doing, provides a model worthy of much more detailed attention than it has yet received.

Definition of the leader in terms of sociometric choice. Sociometry was shown by Jennings (1950) to be an effective instrument for the study of the leadership structure of small groups. This technique, and its many modern derivatives, has been described in detail elsewhere (Chapter 30). In this discussion we wish only to point to this method of identifying the leader of a group, and to indicate its applicability to all primary groups from traditionless laboratory small groups to military and business organizations. There is good evidence that members of a group can identify reliably those persons who exert most influence upon them and that leaders defined this way are closely correlated with leaders identified by external observers and by other criteria. Gibb (1950) has reported that when participants in traditionless groups of ten were asked a question implying selection of coworkers on the basis of "influence," though the word influence was not used, the correlation of these choices with observer ratings of "leadership" was approximately 0.80. And when participants were asked directly whom they regarded as having been leaders, the correlation with observer ratings was again 0.80. Furthermore, Wherry and Fryer (1949) found that Signal Corps officer cadets were able, at the end of one month, to identify leadership to a degree equaled by officers only after four months of observation.

While it is true, as Criswell (1961) claims, that "sociometric research indicates that the position of the leader in the preference structure of a group must be part of the analysis of leadership acts or roles" (p. 27), a word of warning concerning the sociometric definition of the leader is in order. There is abundant evidence (Bales, 1953; Carter, 1952; Gibb, 1950) that the sociometric question asked, or the nature of the sociometric criterion, makes a very considerable difference. For example, studying experimental groups of ten men each, and using ratings made by two trained observers as a criterion of leadership, Gibb (1950) found a correlation coefficient of approximately 0.45 between this criterion and responses to a sociotelic question calling for identification of group members with whom respondents would like to participate further in similar activities. Similarly, this leadership criterion and responses to a psychotelic question asking for the identification of liked coworkers showed a correlation of approximately 0.42. Sociocentrality is not necessarily leadership. Even more convincingly, Hollander and Webb (1955) reported friendship choices having a significantly higher relationship with followership ($r = 0.55$) than with leadership ($r = 0.47$), and concluded that friendship, "so often taken for leadership under the heading of 'popularity,' in fact bore little relation to it." Borgatta (1954), too, has observed that the leadership function and the social leader function are two well-differentiated and recognizable roles. In fact, his data "point to differentiation of roles into at least two categories; that of task leadership and that of support in terms of social and other approval."

These findings were confirmed and extended by the work of Bales (1953), who used a somewhat similar technique. He had participants in small-group discussions answer four sociometric questions relating to (1) contributing the best ideas, (2) guiding the discussion, (3) likes, and (4) dislikes. To these data Bales added observations and analyses of initiation of interaction. Finally, participants indicated whom

they regarded as "the leaders." In the first place, it is of interest that Bales found a direct positive relation between basic initiating rank and votes for "best idea" and "guidance," except that the second man was unaccountably low. Furthermore, this relation did not hold for basic initiating rank and "likes." Here the first man was low while the second was best liked, thus suggesting that the man who is participating most heavily is losing his "likes" and provoking dislike.

Second, the definition of the leader, in terms of sociometric choice, is further advanced by Bales's finding that the "best ideas" and "guidance" roles are most closely associated in the participants' minds with leadership, and that the "best liked" role is *least* closely associated with leadership.

Bales also demonstrated that there was a change over time in the percentage of cases in which the best-liked man played "leader" roles. Whereas the "like" votes coincided with those for "best ideas" and "guidance" to the extent of 64 percent and 41 percent respectively in the first meeting, these figures had fallen to 11 percent and 18 percent respectively by the fourth meeting. Bales suggests (p. 156) that this is a striking indication of incompatibility of these two roles. However, more recently, studies by Marcus (1960) and by Turk (1961) indicate that the salience of task or process problems may be an intervening variable which determines the extent to which "task" or "social emotional" leaders may be liked.

The leader as one who exercises influence over others In general, it is an essential feature of the concept of leading that influence is exerted by one individual upon another, or more commonly, that one or a few individuals influence a larger number. The empirical investigation referred to above (Gibb, 1950) provides strong support for the notion that a leader may be reliably defined in terms of the extent of his influence within a group. In the scientific literature, this form of definition has been employed frequently. The O.S.S. Assessment Staff reported (1948, p. 301):

There was nothing novel in our conception of leadership. We thought of it as a man's ability to take the initiative in social situations, to plan and organize action, and in so doing to evoke co-operation.

Seeman and Morris (1950), in an early report of the Ohio State University leadership series, said (p. 1):

One tentatively adoptable definition of leadership emphasizes its influence aspect: leadership acts are acts by persons which influence other persons in a shared direction. This definition implies a positional relationship between the "leader" and other persons. A leader position is defined in terms of relative status in an influence hierarchy (or relative degrees of influence).

Pigors' (1935, p. 12) definition is still, however, the most satisfactory. He indicated that leadership is a concept applied to the personality-environment relation to describe the situation when a personality is so placed in the environment that his "will, feeling, and insight direct and control others in the pursuit of a common cause."

Leadership and headship differentiated. In order to define the leader as that group member who exercises most influence over his fellows, or even better, to define leaders as those members of a group who influence their fellows more than they are influenced by them, it is necessary to qualify "influence" by insisting that the term

leadership applies only when this is voluntarily accepted or when it is in "a shared direction." The relation between master and slave, teacher and pupil, and frequently that between officer and men is characterized by a type of unidirectional influence which few people would want to call leadership. While there are dissentients (Cooper and McGaugh, 1963; Janda, 1960), there is almost general agreement in the recent literature that leadership is to be distinguished, by definition, from domination or headship. The principal differentia are these:

1. *Domination or headship is maintained through an organized system and not by the spontaneous recognition, by fellow group members, of the individual's contribution to group locomotion.*
2. *The group goal is chosen by the head man in line with his interests and is not internally determined by the group itself.*
3. *In the domination or headship relation there is little or no sense of shared feeling or joint action in the pursuit of the given goal.*
4. *There is in the dominance relation a wide social gap between the group members and the head, who strives to maintain this social distance as an aid to his coercion of the group.*
5. *Most basically, these two forms of influence differ with respect to the source of the authority which is exercised. The leader's authority is spontaneously accorded him by his fellow group members, and particularly by the followers. The authority of the head derives from some extragroup power which he has over the members of the group, who cannot meaningfully be called his followers. They accept his domination, on pain of punishment, rather than follow.*

The business executive is an excellent example of a head exercising authority derived from his position in an organization through membership in which the workers, his subordinates, satisfy many strong needs. They obey his commands and accept his domination because this is part of their duty as organization members and to reject him would be to discontinue membership, with all the punishments that would involve.

The intragroup relations differentiated here as headship and leadership are not, of course, mutually exclusive; but neither are they coincident, as so much of popular thinking suggests. The use by Secord and Backman (1964) of the concept of legitimacy of leadership, while used by them for another purpose, also indicates the possibility that headship has the essential quality of leadership so long as group members perceive the directive attempts of the head as legitimate. As they point out (p. 361), one way in which the leader's actions acquire legitimacy is through formal recognition of his role. The head who confines his influence acts to their "legitimate" boundaries may well enjoy group-delegated power within those limits and at the same time produce positive attitudes toward himself on the part of less powerful others (French, Morrison, and Levenger, 1960; French and Raven, 1958, 1959). Further, many heads are recognized by their subordinates as making very positive contributions to group progress and are therefore accorded willing cooperation and, through it, leadership status. In fact, as Hartley and Hartley (1952) have pointed out, the military forces of the United States and large industrial organizations in this country, which in the past have functioned almost exclusively on a headship basis, have expressed a need for much more leadership in intraorganization relations.

The leader defined in terms of influence on syntality. It was suggested above that the essence of the leader role is to be found in voluntary conferment of authority by followers. It was also indicated that such leadership is bestowed only on persons who appear to contribute to group progress. In other words, the leader's influence on individual group members is secondary to his influence on total group locomotion. It was argued by Cattell (1951) that the existence of a leader is detectable from an examination either of internal group relations (structure) or of the effectiveness of total performance of the group as a group (syntality). On this basis, he proposed that we define leader as "a person who has a demonstrable influence upon group syntality"; and that we measure leadership "by the magnitude of the syntality change (from the mean) produced by that person" (1951, p. 175). This conception of the leader has a number of important implications. There is a variety of independent dimensions of syntality, as we shall indicate later, and change may occur in any or all of these. Furthermore, change may be in the direction of either increase or decrease. From the point of view of overall evaluation, the effect of the leader might be either positive or negative. We cannot talk of good or bad leadership, because whether an increase or decrease along one of the syntal dimensions is to be considered good or bad will depend on the extent and direction with which that factor weights various actual performances for which we already have values. Nevertheless, this concept of the leader will not take us in a completely different direction from that of the preceding category because, as Cattell pointed out (1951, p. 175):

There are certain putative dimensions such as integration, cohesiveness, viscosity which must reach acceptable values for the group to function and survive as a group *at all*, and presumably any leader who can increase these is good
 Apart from these possible exceptions, it is perfectly safe to speak of a leader only as being good or bad *for some specific performance*.

Far more basic is the fact that this type of definition ignores the nature of the relationships between leader and followers. By such a definition our distinction between headship and leadership would disappear, except insofar as one could define these as subtypes of leadership. Similarly, patriarchy, tyranny, sociocentrality, and many other forms of interpersonal relations would have to be regarded as leadership subtypes. Within psychological and sociological literature, we have essentially two concepts which are both designated by the term leader. The one is the all-inclusive concept indicated by Cattell's definition. The other, more frequently found, is more restricted. The group member confers leadership status only upon *some* individuals who exert influence on group syntality, namely, those who are perceived to be moving the group in the direction of a goal which is a group goal because it has a potentially satisfying quality for some needs of all members. It is not true to say that the existence of a leader (in this more restricted sense) is detectable from, or definable in terms of, the effectiveness of group performance.

The leader as one who engages in leadership behaviors. Because of the difficulties involved in using any of the above definitional schemes to guide research in leadership, Carter (1952) and Hemphill (1952) have proposed definitions of leadership in terms of leadership acts. Of these, Hemphill's proposals are the more rigorous and we may confine our attention to them. He suggested (1952, p. 15) that "To lead is to engage in an act which initiates a structure in the interaction of others as part of the process

of solving a mutual problem." Leaders are then to be identified by the relative frequency with which they engage in such acts. This formulation recognizes the fact that groups develop leadership hierarchies and that successive levels are differentiated in terms of frequency of leading. Only rarely, and then only in highly structured organizations, can we identify "the leader." Most groups have many leaders. As Carter says (1953, p. 5), "in actual behavior, the leaders or the followers fulfil their stereotyped roles only in the statistical sense." And, to quote Hemphill again (1952, p. 10): "A leadership role is a differentiation of structure-in-interaction in which the point of reference of the differentiation is frequent leadership acts." In the case of Hemphill's definition the controversial element will probably be the differentium, "initiation of structure in the interaction of others." This concept Hemphill (1952, p. 12) defined as "a consistency in the activities occurring during interaction which would permit the prediction of future interaction activity with an accuracy exceeding chance." While this defines a leader in terms of his intragroup behavior, it again produces a definition which embraces a variety of relations from headship to sociocentrality. This is simply a more restricted form of Cattell's definition insofar as syntality is "that which enables one to predict future performance of a group" and, therefore, structure-in-interaction can be but one facet of syntality.

Focused versus distributed leadership. There is one important advantage in conceiving the leader in terms of the frequency of his performance of leadership acts or functions. Leadership is probably best conceived as a group quality, as a set of functions which must be carried out by the group. This concept of "distributed leadership" is an important one. If there are leadership functions which must be performed in any group, and if these functions may be "focused" or "distributed," then leaders will be identifiable both in terms of the frequency and in terms of the multiplicity or pattern of functions performed. Such a precursory conception appears to accord well with the needs of contemporary research in this area. Heads may be distinguished from leaders in terms of the functions they usually or frequently assume. Similarly, differentiation between all types of influential persons may be possible in terms of the pattern of functional roles characteristic of each.

Whose behavior shall we observe in drawing up role prescriptions of leadership? If we observe all the behavior of all the members, as seems best to do, by what criteria shall we differentiate leaders? Or perhaps the concept of the leader will be of no further value to us when we have differentiated the many roles of which the leadership complex is constituted. To shift the problem of definition from that of defining the leader to that of defining leader behavior or leadership acts has advantages for particular researches and for particular systematic psychologies, but it offers no solution to the definitional problem. Whether we couch our definitions in terms of the leader or the leadership act, it is, of course, leader behavior with which the psychologist is concerned.

DESCRIPTION AND ANALYSIS OF LEADER BEHAVIOR

The definitions discussed in the preceding section leave open the question of the determinants of leader behavior. This matter will be taken up in our later discussion of theories of leadership. At this point it is sufficient to remind the reader that for a quarter of a century between world wars, psychologists gave a large part of their

attention to problems of personality and the measurement of personality. What interest there was in the description of leader behavior during this period was caught up in this tide, and almost all the work reported took the form of a search for traits of personality which were supposed to characterize "the leader."

THE SEARCH FOR LEADERSHIP TRAITS

Widely varying groups were studied in the course of this search, often in a single investigation. Leaders were identified among nursery-school children, in the church, in prison, and in every conceivable group. They and their "followers" were subjected to newly developed personality test techniques and significant differences were avidly sought. An excellent survey of these studies was made by Stogdill (1948), who also pointed out that "there is no assurance that the investigator who analyzes the biographies of great men is studying the same kind of leadership behavior that is revealed through observation of children's leadership activities in group situations" (p. 36). However, it is of considerable interest to discover, in examining Stogdill's review, that some studies employing very different groups and methods yielded remarkably similar results. It is of equal interest to find that some factors appeared only in certain age and social groups and only when certain methods were employed. Stogdill's work has more recently been supplemented by surveys of the literature by Mann (1959) and by Bass (1960). Together, these studies cover a wide variety of "leadership traits."

Physical and constitutional factors

Height Stogdill's review indicated that nine studies had found leaders to be taller, two had found them shorter, while Caldwell and Wellman (1926) suggested that the relation varies with the type of leadership activity. The latter investigators found that girl leaders were of about average height, that class presidents and athletic captains were the tallest of boy leaders, while magazine representatives were among the shortest in the classes. Gowin (1915) found that executives in insurance companies were taller than policyholders, that bishops were taller than clergymen, that university presidents were taller than college presidents, that sales managers were taller than salesmen, and that railway presidents were taller than station agents. Other findings of this kind have led to the suggestion that tallness gives an individual the advantage of conspicuousness, though, of course, anyone can name many famous leaders whose shortness of stature would immediately cast doubt upon any suggestion that tallness is a general characteristic of leaders. It seems that, when height is a significant factor in the achievement of leadership status, it is so as a result of its correlation with other factors which, in some situations, are significant for the assumption of the leadership role.

Weight. Both the facts and conclusions concerning the factor of weight are similar to those concerning height. Some studies (for example, Bellingrath, 1930; Gowin, 1915; Partridge, 1934; Zeleny, 1939) indicated that leaders were bigger and heavier. Animal studies (Maslow, 1936; Schelderup-Ebbe, as reported in Katz, 1937, pp. 198-229; Winslow, 1938) have sometimes led to this same conclusion. To the extent that the leadership role is held by the strongest and most powerful member of the group, and to the extent that the group is one of primitive survival involving bodily fights with members of other groups, this is quite understandable. But it is equally

understandable that Hunter and Jordan (1939) should find their leaders in the activities of schoolchildren to be significantly lighter than nonleaders, since these group activities do not necessarily place a premium upon physical power and athletic prowess.

Physique, energy, health. Other studies have suggested low positive correlations of physique with accession to positions of leadership, though once again the nature of the group activity requires specification. Bellingrath (1930) suggested that leaders had better health than nonleaders, but Hunter and Jordan (1939) failed to confirm this difference for their particular groups. Some writers have indicated that leaders are characterized by a high rate of energy output. The leader must have energy of one kind or another, for energy is required in pursuing any group goal.

Appearance. Several studies have investigated the appearance, dress, etc., of leaders and have, in general, agreed in suggesting a possible relationship between appearance and holding a leadership role. Thus, Partridge (1934), who studied Boy Scout leaders, found a correlation of +0.81 between appearance ratings and leadership status. Ackerson (1942) found that slovenliness and leading others in misconduct correlated +0.32 for delinquent boys and +0.31 for delinquent girls. Dunkerley (1940) found that female students chosen as leaders in social activities differed significantly from nonleaders in appearance and dress, but that those chosen for leadership in intellectual and religious activities did not differ significantly from nonleaders.

Intelligence

In the study of leadership, as in the study of other areas of behavior, both psychologists and laymen have been supremely aware of differences in intelligence. Investigations of the relation between leadership and general intelligence are numerous, and with few exceptions they agree in finding that leaders are superior to nonleaders (Mann, 1959). But even here a few studies have tended to show that the essential matter is one of relationship to the group situation and of the leaders' contribution to the group goal. However, since so much of behavior, both individual and group, involves problem solving, and since it is one of the conditions of the emergence of leadership that there must be a group problem, it is not surprising that this trait seems generally to be a contributing factor in leadership. Nevertheless, it cannot be asserted lightly that the importance of this factor is purely a question of general intelligence in problem solving.

Gibb (1947) found that preselected candidates presented to a military officer selection board were significantly superior in intelligence to the Army standard sample and to the estimated civilian population. Candidates actually selected by the board for officer training were still further differentiated with respect to intelligence-test scores. Less than one percent of the selectees fell below the estimated population mean. As against the above findings, Webb (1915), using a group of 200 English college boys, obtained a negligible correlation between scores on an intelligence test and leadership ratings given by students and supervisors. If persuasive or dominant leaders and headmen are considered, we are not always impressed with the quality of intelligence they manifest. In positions where information and mental skill are necessary, the intelligent person achieves leadership, but in many groups pursuing routine, mechanical, practical activities, intelligence is not highly valued.

Mann's review leads him to say (p. 248): "considering independent studies as the unit of research, the positive association between intelligence and leadership is found to be highly significant . . . However, the magnitude of the relationship is less impressive, no correlation reported exceeds .50 and the median r is roughly .25."

In general, we conclude that leaders are more intelligent than nonleaders, but we would do less than justice to the data if we left the matter there. The evidence is clear that in some situations the correlation will be considerable, while in others it will be negligible or even negative. Further, Cattell and Suce (1954) have shown that the type or criterion of leadership used makes a difference. They found that problem-solving leaders were significantly more intelligent than nonleaders but also significantly more intelligent than leaders by other criteria. It is also notable in their data that sociometric or popular leaders show no differences from nonleaders in respect of intelligence.

One of the most interesting results emerging from studies of the relation between intelligence and leading is the suggestion that leaders may not exceed the nonleaders by too large a margin. Great discrepancies between the intelligence of one member and of others militate against his emergence into and retention of the leadership role, presumably because wide discrepancies render improbable the unified purpose of the members concerned and because the highly intelligent have interests and values remote from those of the general membership. The evidence suggests that every increment of intelligence means wiser government, but that the crowd prefers to be ill-governed by people it can understand.

Personality traits

Self-confidence. To be a leader in any situation, an individual group member must appear to make positive contributions to group locomotion. There can be little doubt that his self-confidence and self-assurance contribute to this kind of valuation of him. Thus it is to be expected that self-confidence will bear a positive relation to leadership. Cowley (1928) found self-confidence to be one of the factors possessed in common by his three widely different types of leaders. Richardson and Hanawalt (1944a, 1944b) found that college and adult leaders obtained higher scores on the Bernreuter self-confidence scale than did nonleaders, but Hunter and Jordan (1939) found no difference between college leaders and nonleaders on the same measure. Cox (1926) found that great leaders are characterized by such traits as self-confidence, self-assurance, and self-knowledge, and further, that they exhibit a marked degree of dominance need, eagerness for admiration, desire for the limelight, etc. Correlation coefficients as high as 0.59 have been reported by Drake (1944) between ratings of self-confidence and leadership status, while Bellingrath (1930) reported a correlation of 0.58 between teacher ratings of self-confidence and of leadership for 224 boys. For potential military leaders, Gibb (1947) reported an estimated correlation of 0.60 between interviewer ratings of self-confidence and selection by a specifically functioning board.

The general implication of these findings is that leaders, more or less consistently, rate higher than followers in self-confidence or self-assurance. Such findings make it abundantly clear that individual personality cannot be left out of the leadership picture. Leadership cannot be exclusively a function of the situation as it is

seen by an independent observer, for individual differences clearly affect the social perceptions of some individuals by others, and consequently play an important part in giving structure to the situation for those who are a part of it.

Personality integration or adjustment. In his review, Mann (1959) reported 164 results bearing on the relation of leadership to personality integration. Of these, 80 percent were in the positive direction and the overall trend was clearly positive, though again no single adjustment measure had a correlation coefficient with leadership exceeding 0.53 and the median correlation was estimated at 0.15.

Cattell and Stice (1954) found that an absence of *anxious worrying* (O -), which is one of the principal variables in adjustment (Cattell, 1956), differentiated between leaders in all categories and nonleaders, though this difference did not quite reach statistical significance in the case of the sociometric popular leaders. This latter result is a little surprising in view of the fact that the best understanding of this relationship would seem to be that the O + pattern of anxious worrying and cautiousness in dealing with people fails to win confidence from others. In the same research other variables, which are also defining variables for the factor of personality integration, show significant relationships with leadership. Another of the three most consistently differing measures is *deliberate will control* (Q3), which differentiates significantly between leaders of all categories and nonleaders. Here it may be suggested that the determination, the stability of purpose, and the organizational precision associated with Q3 enables a person "to see his decisions through and to organize the group with consistency and a high degree of planning." The fact that Q3 most clearly distinguishes the problem-solving leaders who were identified by frequency of leading acts noted by nonparticipant observers lends support to this interpretation. The measure of *nervous tension* (Q4) was also consistent in showing leaders to be less afflicted than were nonleaders. Finally, the measure of *ego strength* (often identified with adjustment) also shows consistently that leaders are more emotionally mature than nonleaders.

Holtzman (1952) found that adjustment and leadership ratings in two small independent groups were correlated to the extent of 0.67 and 0.87 respectively. Recognizing that such ratings of adjustment can be of *outer adjustment* only, that is, of observable reaction patterns, he further identified Rorschach indications of (presumably) deeper adjustment patterns and found these to correlate 0.53 and 0.15 with leadership in the two groups. Two other studies based on ratings by peer-group members and the sociometric measurement of leadership (Beer *et al.*, 1959; Gordon, 1952) found a significant correlation between "responsibility" and leadership. Richardson and Hanawalt (1952) showed, over a series of studies, that leaders in a variety of situations and of either sex obtained superior scores on the Bernreuter scales of dominance and self-confidence and made lower scores on neurotic tendency and introversion. Most significantly, however, they report that an analysis of the individual items of these scales suggests that the differences between leaders and nonleaders lay chiefly in the better adjustment of the leaders. Williamson and Hoyt (1952), who used the Minnesota Multiphasic Personality Inventory, reached a similar conclusion with respect to student political leaders.

Many investigators have reported significant correlations, even as high as 0.70, between "will power and perseverance" and leadership. Hanawalt, Hamilton, and

Morris (1943) found the level of aspiration for 20 college women leaders significantly higher than that of a comparable sample of 20 college women nonleaders. Stogdill (1948) reported that a number of investigations had found leaders to rate high in application and industry.

A study of the business executive by Henry (1949) may be included here, since the majority of this experimental group were in "businesses of moderately loose organizational structure in which cooperation and teamwork are valued and in which relative independence of action is stressed" Henry's findings suggest that high drive and achievement desire, strong aspiration to upward mobility, decisiveness, a strong sense of self-identity, and an essentially active, striving personality characterize these executives. In many respects, this picture of the leader is similar to that of Cattell and Stice (1954).

One is constrained to point out here that these findings do not, in fact, suggest the frequently heard contention that leaders are people who force themselves by repeated efforts into positions of leadership. Rather, an interpretation more consistent with the data would be that this trait of integration or adjustment is highly prized by groups. Thus, as Mann (1959) says: "while no single measure of adjustment can be expected to be an efficient predictor of leadership, there is strong evidence to indicate a positive relationship between an individual's adjustment and the leadership status he is likely to attain" (p. 249).

Dominance. Krech, Crutchfield, and Ballachey (1962) remark that we cannot have leaders without followers and we cannot have leaders without leaders. In other words, for the emergence of effective leadership in any group there must be among its members some, at least, whose needs will best be met by their assumption of leadership roles. "Like any member, the potential leader seeks achievement of the group goals and seeks also the satisfaction of accessory wants. But what marks off the leader from the non-leader is the strength of certain kinds of wants in him that are especially well served by the leadership role. Primary among such wants are wants for power, prestige and material gain [dominance]" (p. 426). It is a fair implication of this demand that individuals whose personalities are characterized by dominance or ascendance will more frequently be found to occupy or to emerge in leadership roles. This view does have some support from empirical studies.

Hunter and Jordan (1939), in their comparison of 82 college leaders with nonleaders, used the Bernreuter test and found leaders significantly more dominant than nonleaders. Using the same test, Richardson and Hanawalt (1952), as mentioned above, found that all categories of leaders, whether male or female, showed more dominance as measured by the Bernreuter scale than did nonleaders. Bass *et al.* (1953) reported a significant correlation between leadership status and measures of ascendance and social boldness from the Guilford-Zimmerman temperament survey. Guetzkow (1960) obtained similar results using this measure. Borg (1960) derived four factor scores from a variety of tests which were primarily measures of personality variables and related these to small-group roles including leadership. The predictor personality factor of "assertiveness" was correlated +0.46 with leadership, and this was the highest single correlation achieved. Still more recently, Smelser (1961) has found that dominance-differentiated pairs are more efficient in problem-solving interactions. To such findings as these must be added the fact that Mann's (1959) review found that 73 percent of the results in this area were positive, with an estimated median correlation of +0.20.

Jennings (1950), by contrast, found that dominant, aggressive people tend to be rejected or isolated rather than chosen and given the role of leader; but it is to be remembered that Jennings' subjects were some 400 girls in an institution to which they had been committed by a Children's Court, and that the ratings of dominance and aggression were made by housemothers as *complaints* against the girl, based on such behavior as "getting another individual to submit to wait on her, make her bed, do her 'commands', give in to her suggestions when doing a common task with another, and the like." This is quite a far cry from simply answering "yes" or "no" to the questions: "Would you feel self-conscious if you had to volunteer an idea to start a discussion among a group of people?" "Have you ever organized any clubs, teams, or other groups on your own initiative?" "Do you keep in the background at social functions?" "Do you lack self-confidence?" These are, in fact, four of Bernreuter's ten most discriminative items on the dominance scale. In the light of difficulties of definition, we are not able to say that such findings as those of Richardson and Hanawalt and those of Jennings are contradictory. Indeed, it is probably relevant here to recall Hoffman's (1959) conclusion that individual differences among group members account for relatively little of the differences in group-member behavior as compared with the problem requirements and group characteristics.

A similar comment applies to the study made by Hanfmann (1935) of dominance in a group of ten five-year old boys. Using a paired performance method, she determined a rank order of dominance and then asked the children whom they most preferred to play with. Eight of the ten named either *C* or *D* who were third and fourth in the dominance hierarchy, and did not name *A* or *B*, the first and second. But again the details alter the story. Both *C* and *D* used cooperative methods and they, in fact, were able to lead *A*. On the other hand, *B*'s methods were those of a "little gangster," while *A*'s were wholly destructive. Thus, this evidence cannot wholly contradict the suggestion of correlation between dominance and leadership, because the leaders *C* and *D* are in some measure dominant, and because the criterion here is that of liking or preference.

However, Cattell and Stice (1954) found that for one only of the operational definitions of leadership employed in their study was there any significant differentiation between leaders and nonleaders in terms of factor *E* (dominance). It was true that the leaders invariably made the higher (more dominant) score, but in only the case of sociometric leaders did this achieve statistical significance.

Gordon (1952) also reported an insignificant though positive correlation between dominance and sociometric leadership. And it is noteworthy that both Stogdill's (1948) and Mann's (1959) studies included a number in which no differences could be found between leaders and nonleaders in this respect. It is of considerable interest that Mason (1964), discussing studies of social organization among monkeys and apes, has reported that "there are data to suggest that dominance is most pronounced in those groups showing a general tendency toward more direct or extreme overt reactions to environmental stimuli" (p. 301). It does seem clear that the evidence favors the conclusion that dominant individuals are more likely to be designated leaders, but it seems equally clear that this is a relationship which is very much contingent upon a set of situational variables which have not yet been elucidated.

Extraversion-introversion. It is certainly a popularly held expectation, and one to which the majority of psychologists would subscribe, that extraverts who are sociable and outgoing would more commonly be leaders than would introspective and shy intro-

verts. While the research evidence tends in this direction, it is not nearly so clear-cut as might be expected. Mann (1959) found that 72 percent of the results were positive, yielding an estimated median correlation of 0.15; but only 33 percent of the results were both significant and positive.

Goodenough (1930), in her study of the behavior of young children, reported a correlation of +0.59 for extraversion with leadership. Other correlations in her study which throw light on this pattern are talkativeness with leadership (+0.55) and amount of laughter with leadership (+0.33). Some work of Fauquier and Gilchrist (1942) has suggested that leaders among institutionalized delinquent boys were more impulsive, more excitable, more extraverted and secure.

Richardson and Hanawalt (1952) reported that in their earlier studies leaders had scored lower in introversion on the Bernreuter scale than had nonleaders, but that female officeholders in the 1952 research were not differentiated from nonofficeholders on the sociability (F_2 -S) scale. The Bernreuter introversion scores also failed to differentiate college leaders from nonleaders in Hunter and Jordan's (1939) study. Similar results had earlier been obtained by Bellingrath (1930). Gordon (1952) again achieved zero correlation between ratings by dormitory mates for sociability and election to leadership positions.

The study by Caldwell and Wellman (1926) is also of interest in this connection, and may again give some clue to the apparent discrepancies among the various studies. They reported (p. 13) that "extraversion among the girls was most marked in the science-club chairmen, student council members and magazine staff members. In all types of leadership, except athletics, the girls were ranked as extraverts. The boys tended to be more extravertive than introvertive, but not to such a marked degree as the girls. The (boy) magazine staff representatives were notable exceptions, ranking as decided introverts."

Thurstone (1944) expressed some surprise in finding that campus leaders were inferior in word fluency (an accepted index of surgency), which he had expected to be high for such a group. But a second study reported in the same publication found that successful administrators had slightly more introverted scores in the Guilford personality schedule for "thinking introversion." Certainly, later work (Bass, 1949; Kirscht, Lodahl, and Haire, 1959; Norfleet, 1948) has demonstrated correlations between frequency of participation and achievement of leadership status.

Again, the Cattell and Stice (1954) data provide food for thought. Of the factors which define the second-order personality factor of extraversion-introversion (Cattell, 1956), only *H* (adventurous, friendly, outgoing, cooperative) differentiates all four types of leaders from nonleaders. The *F* (surgency) measure, however, differentiates problem-solving leaders and, at an even higher level of significance, the elected leaders. The selection of the problem solvers depended on frequent notation by observers of influential behavior in a wide variety of situations, but not necessarily in marked degree or continuously, and the authors pointed out that the spontaneous fluency of ideation and impulsiveness associated with surgency could well lead to frequent bits of influential contribution to problem solution. In the case of the elected leaders, surgency was the principal way in which they differed from nonleaders and from the leaders in all other categories. Of this, Cattell and Stice say (1954, p. 499):

It is particularly remarkable that while a higher endowment on this trait is useful in securing election, it bears almost no relation to who is selected when the group

member is asked to recall "whom do you judge to have been the leaders of this group throughout these meetings?" Indeed, if we could partial out the responses to this question which simply listed the elected leaders, it might be that, by the sociometric criteria, the low *F* person is in fact recalled as exercising more influence.

The implications of these data are highly important. Could it be that we may predict a surgent personality for the formally recognized and elected leader, while such is not the case with "powers behind the throne"? If the answer to either of these questions is affirmative, we are faced with far-reaching implications for the democratic processes of leadership succession.

Conservatism. The fourth of Cattell's (1956) second-order personality factors might well be called conservatism, and this is one of the personality factors Mann (1959) chose to investigate, for the very good reason that a number of studies have examined the relation between leadership and authoritarianism as measured by the California *F* scale. The concept of authoritarianism has attracted a great deal of attention, and there has been much interest in the question whether groups, in our cultural setting, tended to be led by authoritarians or antiauthoritarians.

Bass (1954) reported a correlation (η) of 0.30 between *F*-scale authoritarianism and leadership performance in initially leaderless groups. The highly authoritarian, stereotyped, rigid, and conservative personalities displayed little leadership, but the extremely equalitarian also fared poorly. Leadership was displayed rather by the moderately equalitarian personalities. It might be noted here that Medalia (1955) also was led to suggest that the *F* scale is probably not unidimensional and that the significant fact for leadership may be that extreme equalitarians are just as rigid in their behavior as extreme authoritarians. Confirmation of Bass's results is to be had from a number of studies, as Mann (1959) indicated. Hollander (1954), for example, obtained a significant correlation of -0.18 between authoritarianism and leadership when the common effect of intelligence had been removed, while Masling, Greer, and Gilmore (1955) obtained a small but significant negative correlation between authoritarian attitudes and sociometric nomination when the effects of status were held constant. However, contradictory results have also been reported. Carter *et al.* (1951) found that those who were identified as leaders in their neonate groups also displayed authoritarian behavior. Hollander examined this contradiction in some detail and in relation to a careful examination of the *F* scale itself. As a result, he suggested that it is likely that the assumption of a close correspondence between authoritarian behavior and *F*-scale scores may not be justified, despite the fact that some correlation has often been demonstrated. What is more important, however, Hollander suggests that items of the *F* scale give grounds for believing that a high score might be indicative of lack of social intelligence or social perception. If this is so, as he points out, "individuals who are 'authoritarians' in the *F*-scale sense are unable to deal effectively with the needs of others and therefore tend to be rejected by potential followers" (1954, p. 370). It may be noted here that Masling, Greer, and Gilmore (1955) also reached the conclusion that equalitarians are warmer individuals and are less hostile than authoritarians.

A further study by Haythorn *et al.* (1956a), which approached this relationship quite differently and which effectively replicated the findings and observations of Sanford's (1950) pioneering study, certainly demands mention here. Haythorn and

his colleagues constituted undergraduate groups in such a way that half were composed of high-*F* subjects and half of low-*F* subjects. The emergent leaders in the two kinds of groups differed quite significantly with respect to a number of observer-rated behavioral traits, "indicating that a qualitatively different kind of leadership occurs in groups comprised of personalities at opposite ends of the authoritarian-equalitarian dimension. Emergent leaders in the low *F* groups were more sensitive to others, more effective leaders, more prone to making suggestions for action subject to group sanction, and less likely to give direct orders to others" (p. 72). Since leaders in high-*F* groups could not help but be high-*F* scorers themselves, and vice versa for the low-*F* groups, the interaction or "cultural" effect cannot be either discounted or asserted here. But this additional evidence that low-*F* leaders in low-*F* groups are more sensitive to others, show a higher degree of leadership, and greater effective intelligence lends strong support to Hollander's suggestion mentioned above. Much of the justification for such an explanation may be found in the following section.

With respect to more direct evidence relating conservatism to leadership, there is little to examine. In the Cattell and Stice (1954) study, the radicalism-conservatism scale (Q1) of the Sixteen Personality Factor Test, which considerably overlaps the *F* scale, failed to differentiate between leaders and nonleaders. Fleishman and Peters (1962) found that department managers who valued conformity highly tended to be rated less effective by top management. They commented: "Any causal relationship is uncertain here; on one hand it may be that the reasons which cause a manager to value Conformity highly will hinder his effectiveness, and on the other hand, it may be that the managers who feel themselves to be ineffective will value the protection that explicit rule Conformity affords" (p. 137).

As has already appeared on a number of occasions in this review of personality characteristics in relation to leadership, seemingly contradictory or puzzling results are brought within a consistent framework when an interactional or contingent view is taken of them. So, in this case, important clues to the relation between authoritarianism and leadership probably lie in yet another study by Haythorn *et al.* (1956b). Here the effects were examined of varying combinations of authoritarian and equalitarian appointed leaders and followers. There were differences between leaders with high-*F* followers and leaders with low-*F* followers. "The behavior of leaders is to a significant degree a function of the attitudes or personality characteristic of the followers"; and there is evidence that the differences between high-*F* and low-*F* leaders are "contingent on whether the followers are high or low *F*." Such a finding, associated with Hollander's well-supported suggestion that the *F* scale may cloak other variables of more direct significance, removes much of the puzzlement from a set of results which have so generally run counter to hypothesis.

Empathy or interpersonal sensitivity. Since 1950 we have seen a very considerable interest in the empathic ability or "sensitivity" of leaders, much of it apparently traceable to the work of Chowdhry and Newcomb (1952). Again, Mann (1959) has reviewed these studies very thoroughly and has concluded that there is a low but clearly positive relationship between interpersonal sensitivity and leadership. In fact, 15 of the 16 significant results he examined in 15 different studies suggested greater sensitivity among leaders. However, as Mann discusses in some detail (pp. 250-251), there are here (as with other research in empathy) methodological issues which cloud the results, and many of these positive findings are contingent upon other factors, as the following brief account will show.

Chowdhry and Newcomb (1952) demonstrated that group leaders were much more accurate (sensitive) than nonleaders in estimating group members' opinions concerning matters relevant to the group, and their analysis encouraged them to conclude that leaders of groups (of the kind they studied, namely, real groups on a college campus) may be chosen, in part at least, *because* of recognized qualities of "sensitivity" to other members of the group. Some other investigations of very similar variables, however, failed to find such a positive relationship (Gage and Exline, 1953; Hites and Campbell, 1950). Hites and Campbell, after finding that elected leaders, appointed leaders, and nonleaders in fraternities did not differ in ability to estimate group opinion, suggested the possibility that in these groups there was so much interaction that all could predict the opinions of others accurately. Gage and Exline found that, within discussion groups in a training laboratory, those who were ranked high for contribution to productivity of the group (that is, as task leaders) were not more accurate in predicting group opinions, satisfaction with meetings, or ratings of leadership. Their data led the authors to recognize that the relation of empathy to social effectiveness is highly complex. Subsequently, these data have led to the suggestion by Newcomb that it is necessary to deal with judgments that are not common knowledge and which are relevant to the concerns of the group.

To revert briefly to some of the studies in which the summary positive relation has been observed, it is of interest that Bell and Hall (1954) have suggested that, by using tests of empathy, such as those of Kerr and Dymond, it would be theoretically possible "to account for some twenty percent of the variance in leadership scores on the basis of the empathic ability to understand the phenomenological field of others." Further, Smith, Jaffe, and Livingston (1955) have reported that for their training laboratory groups those persons whose judgments on group-relevant matters (for example, power) most resembled the group's judgments were not only more highly valued by the group, but were also seen by outside observers as the most effective group members. Somewhat similar data, for military trainee groups, have been produced by Showell (1960). In this study it appeared that measures of interpersonal knowledge and ratings for leader potential were positively and significantly associated. A considerable portion of this association was shown to be attributable to intelligence, but not all could be so attributed. A partial correlation of 0.34 remained after intelligence was controlled, to attest, as Showell says, to the generally accepted leadership principle: "Know your men." Showell, however, appears less willing than Newcomb to attribute the ratings for leadership to personality characteristics. He is, however, able to reduce the possibilities to two. First, the possession of interpersonal knowledge (sensitivity) might enable one to deal more effectively with his coworkers and so encourage both these coworkers and other observers to rate his leader potential more highly; or, rather similarly, in the process of obtaining superior interpersonal knowledge one might suggest a high degree of personal interest in his fellows who, in turn, rate him more highly in leader potential. Second, some further factor might, of course, account for both the high level of interpersonal knowledge and the high degree of leadership potential. Talland's (1954) study would suggest that this second possibility indeed requires consideration. He found that carefully identified leaders in psychotherapeutic groups were not more accurate in assessing group opinion than were other members, before a public discussion in which group opinion was formulated. In the course of such discussion, data were obtained which showed that the leaders were most influential in determining the group opinion which emerged, and they tended to bring it into line with their own personal views.

It would thus seem that, given an opportunity to participate in the formation of group opinion, the leader would be able to predict it more accurately by doing little more than projecting his personal views. Further contingencies are indicated by Exline (1960) and Gallo and McClintock (1962). Exline's results were consistent with Newcomb's observation in providing "qualified support for the proposition that a positive relationship between accuracy of social perception and sociometric status was more likely to occur when group conditions enhanced the relevance of measures of accuracy and status to group goals held in common with others" (Exline, 1960, p. 100). Gallo and McClintock found that, when persons in an artificial experimental group are placed by that group in a leadership role, those who have experience of the role through having been leaders elsewhere are more accurate in perceiving their leadership status than those who are inexperienced.

Finally, Meyer (quoted in Smith, Jaffe, and Livingston, 1955) found, in his analysis of work-group leadership, that good leaders perceive others as individuals with motives, feelings, and goals of their own, whereas poor leaders are more likely to perceive others in relation to their own motives and goals. This is reminiscent of the suggestions by Hollander and by Masling, recorded in the previous section, that leaders tend to be warmer, less hostile persons who can deal effectively with the needs of others. These formulations also anticipate our treatment, in a later section, of consideration behavior as a major dimension in the analysis of leadership.

In summary, the results of these many studies of the relationship between empathy or social sensitivity and leadership can scarcely be stated as simply as Mann (1959) perhaps implied. Rather, they indicate clearly that the nature of the relationship depends heavily on other variables. Fiedler's (1964) "contingency theory," to be discussed in some detail below, is the carefully researched and elaborated culmination of this line of thinking.

Situational relativity of traits. It is not only, however, in this last section that we have been led quite forcibly to note the contingent nature of the relationship of personality traits to leadership. There are indications in this review of the present status of the search for leadership traits that intelligence, extraversion, adjustment, dominance, and empathic ability may all characterize leaders of various types in certain situations and under specific conditions.

In every instance, the relation of the trait to the leadership role is more meaningful if consideration is given to the detailed nature of the role. A person does not become a leader by virtue of his possession of any one particular pattern of personality traits, but the pattern of personal characteristics of the leader must bear relevant relationship to the present characteristics, activities, and goals of the group of which he is leader. "Thus, leadership must be conceived in terms of the interaction of variables which are in constant flux and change" (Stogdill, 1948, p. 64). A group member achieves the status of group leader for the time being in proportion as he participates in group activities and demonstrates his capacity for contributing more than others to the achievement of the group goal. Nowhere has this appeared more plainly than in a pair of studies by Schrag (1954) and Grusky (1959). Using a sociometric criterion, Schrag studied leadership among prison inmates and found that factors related to criminal career and institutional adjustment were significantly associated with leadership, while social and economic background characteristics such as age, occupation, education, marital status, and intelligence were not. On the whole, he found that leaders had served more years in prison; had larger sentences

remaining to be served; had more frequently been convicted of crimes of violence; tended to be homosexual, neurotic, and psychopathic; and were involved in more cases of attempted escape, fighting, and assault. In short, leaders were apparently chosen on the basis of the values of prison inmates, namely, rebelliousness and nonconformity. Grusky, in full knowledge of Schrag's findings, and working in a small prison where treatment was a dominant goal, found there a pattern of cooperation between informal leaders and prison authorities. In this case the inmate culture gave status to the most cooperative rather than the most hostile offenders. It is worthwhile to note here in passing that Wolman (1956) has shown how leadership is a function of the specific situation in a group, that leaders satisfy the momentary needs of the group, and particularly that leadership is a function of perceived capacity to satisfy these needs rather than of expressed willingness to do so. It is known that the situation is especially liable to alter through changes in goals, changes in morale, changes in interpersonal relations, the entrance of new members and the departure of others, pressures from other groups, and so on. Since individual personality characteristics are by contrast stable, it is to be expected that group leadership may, if unrestricted by hierarchical structuration in the group, pass from one member to another. Some of the research mentioned above has given experimental support to this conclusion. Further confirmation is to be found in the observations of groups.

Summary statement of the relation between personality traits and leadership

In the study of the relation between personality traits and leadership, two things seem to be well established at this time. In the first place, reviews such as those of Stogdill and Mann reveal that numerous studies of the personalities of leaders have failed to find any consistent pattern of traits which characterize leaders. The traits of leadership are any or all of those personality traits which, *in any particular situation*, enable an individual to (1) contribute significantly to group locomotion in the direction of a recognized goal and (2) be perceived as doing so by fellow group members. Second, there is abundant evidence that member personalities do make a difference to group performance, and there is every reason to believe that they do affect that aspect of the group's behavior to which the leadership concept applies.

The failure to establish a definitive relation between personality and leadership may be due to one or more of four factors:

1. Personality description and measurement themselves are still inadequate. It may be that in leadership research the really significant aspects of personality have not yet been investigated.
2. The groups studied have usually been markedly different from one another, and this may have had the effect of concealing a relation between personality and the exercise of leadership within a more homogeneous set of groups or family of situations.
3. Situational factors may, and sometimes do, override personality factors, as Katz (1960) has demonstrated. Katz formed sixteen groups each composed of two Negro and two white college students who had been matched for intelligence. In half the groups both white subjects had high authoritarian (*F*) scores; and in half, low *F* scores. He found that authoritarian whites accepted more suggestions from the Negro members, showed greater trends toward compliance, and rated Negroes higher on

intelligence, maturity, and dominance. Katz explains that all this was most probably because the authoritarians feared revealing anti-Negro attitudes in a potentially punitive environment. One cannot help but be reminded of Festinger's (1947) finding that Jewish girls in a public voting situation appeared to inhibit an expression of Jewish preference which was clearly demonstrated in more private circumstances.

4. Leadership itself is known to be a complex, and probably not consistent, pattern of functional roles. There could be a relation between personality and the taking of particular roles which is not reflected in a study relating personality to a variable pattern of roles. When situational demands are different from group to group, it is not possible to specify the personal traits which will be associated with accession to leadership. "Instead we must try to define the leadership functions that must be performed in these situations and regard as leadership those acts which perform them" (Bavelas, 1960, p. 494).

THE EMPIRICAL DETERMINATION OF DIMENSIONS OF LEADER BEHAVIOR

The psychological literature contains many analyses which have attempted to describe what it is that leaders actually do. It has been suggested that they exercise authority, act in such a way as to reveal a knowledge of human nature, act decisively, and so on. The United States Army adopted 11 leadership principles, the results of an analysis of outstanding leadership displayed by successful personalities, both military and civilian (Carter, 1952). Among these were listed behaviors which may be rephrased and reorganized in such terms as:

1. *Performing professional and technical specialty.*
2. *Knowing subordinates and showing consideration for them.*
3. *Keeping channels of communication open.*
4. *Accepting personal responsibility and setting an example.*
5. *Initiating and directing action.*
6. *Training men as a team.*
7. *Making decisions.*

There are, too, a number of rather more carefully and empirically designed researches in this area. Jenkins (1948) had members of air squadrons identify persons with whom they preferred to fly and to say why they chose as they did. He was able to list a number of behaviors which influenced this kind of choice. Roff (1950a) had recently returned flying officers complete rating scales relating to effectiveness in combat leadership to throw light upon the importance of different types of behavior in the command situation. He reported a number of behaviors which differentiated significantly between the best and the poorest leaders. The American Institute for Research attempted to discover what are the *critical requirements* of an Air Force officer's job (Preston, 1948). In this study, 640 Air Force officers, whose ranks and jobs differed widely, were interviewed and each was asked to think of a definite situation in which he had observed an officer behave either effectively or ineffectively. The informant was then asked to describe the specific behavior that was effective or ineffective in the particular situation. This procedure yielded a very large number of incidents of both effective and ineffective officer behavior. These incidents were

then classified, subjectively, into the following general areas of behavior:

1. *Supervising personnel.*
2. *Planning, initiating, and directing action.*
3. *Handling administrative details.*
4. *Accepting personal responsibility.*
5. *Showing group belongingness and loyalty to the organization.*
6. *Performing professional or technical specialty.*

Careful attention was given to the description of leader behavior by the University of Rochester studies (Carter, 1953). These studies sought to analyze the behavior of leaders and other group members by direct observation of members of small homogeneous groups, with immediate recording of the behavior exhibited. In some of these groups, individuals were appointed by the experimenter to function as leaders, while in other "emergent" situations no such appointments were made. Thus, "leaders" were the individuals so designated in the appointed situations or the individuals receiving the highest observer ratings for leadership in the emergent situations. There were two behavior categories in which leaders consistently and significantly exhibited a different level of activity from other group members. These were (1) "Diagnoses situation—makes interpretation" and (2) "gives information on how to carry out action." There were also some behavior categories in which differences, while consistent, did not reach acceptable levels of statistical significance. Consideration of these does, however, permit the tentative conclusion that "leaders are characteristically concerned with (a) getting insight or analyzing the situation, and (b) initiating the action required" (Carter *et al.*, 1951, p. 595). It was another interesting, and important, finding of these studies that behaviors which characterized leadership in one type of task and situation did not necessarily characterize it in other tasks and situations. Furthermore (Carter *et al.*, 1951, p. 591):

There seem to be interesting differences in behavior depending on whether the group was working under emergent or appointed-leader conditions. It appears that in the appointed situation the leader may perceive his role as that of a co-ordinator of activity or as an agent through which the group can accomplish its goal. In the emergent group, on the other hand, the person who becomes the leader may take over the leadership by energetic action and by trying to get the other members to accept his leadership.

In another study, Couch and Carter (1952), using similar small groups and similar techniques of observation, attempted to determine factorial dimensions of the behavior of individuals in group situations. In all the analyses reported, three factors emerged. Of these Carter offered the following verbal identifications (1953, p. 16):

Factor I: Group Goal Facilitation—the dimension of behavior which is interpreted . . . as being effective for achieving the goal towards which the group is oriented. Efficiency, insight, cooperation, etc., all seem to have a common element of facilitating group action in solving the task.

Factor II: Individual Prominence—the dimension of behavior which is interpreted as indicating the prominence of that individual as he stands out from the group. The behavior associated with the traits of influence, aggressiveness, leadership, initiative, and confidence seems to have a common element of individual behavior which is interpreted as achieving recognition by the group of a member's individuality.

Factor III: Group Sociability—the dimension of behavior which is interpreted as indicating the positive social interaction of an individual in the group. The traits heavily loaded in this factor—sociability, striving for group acceptance, cooperation and adaptability—all have a common element of representing a friendly interpersonal pattern of behavior of the individual towards the group.

For our purposes the relation between observations of leadership and these dimensions are of particular interest. Carter reported that the average loadings for leadership were 0.35 on Factor I, 0.90 on Factor II, and 0.05 on Factor III; which means, of course, that in this scheme of analysis, leader behavior is seen by the observers to be almost identical with that indicating any form of prominence in the group and, to some extent, as behavior that is goal facilitating. In many respects this study represents a preliminary overview of the behavior of group members, and it is encouraging that it indicates such ready differentiation between the behaviors of leaders and others.

The most notable, and the most complete, research directed toward the determination of dimensions of leader behavior has been that of Hemphill and his colleagues in the Ohio State University Leadership Studies (1950a). These studies began by defining leadership tentatively as "behavior of an individual when he is directing the activities of a group toward a shared goal" (Halpin and Winer, 1952, p. 6). Nine *a priori* dimensions of leader behavior were postulated as follows (Hemphill, 1950a, pp. 5-6):

1. *Initiation.* The dimension, initiation, is described by the frequency with which a leader originates, facilitates or resists new ideas and new practices.
2. *Membership.* The dimension, membership, is described by the frequency with which a leader mixes with the group, stresses informal interaction between himself and members, or interchanges personal services with members.
3. *Representation.* The dimension, representation, is described by the frequency with which the leader defends his group against attack, advances the interests of his group and acts in behalf of his group.
4. *Integration.* The dimension, integration, is described by the frequency with which a leader subordinates individual behavior, encourages pleasant group atmosphere, reduces conflict between members, or promotes individual adjustment to the group.
5. *Organization.* The dimension, organization, is described by the frequency with which the leader defines or structures his own work, the work of other members, or the relationships among members in the performance of their work.
6. *Domination.* The dimension, domination, is described by the frequency with which the leader restricts the behavior of individuals or the group in action, decision-making, or expression of opinion.

7. *Communication*. The dimension, communication, is described by the frequency with which a leader provides information to members, seeks information from them, facilitates exchange of information, or shows awareness of affairs pertaining to the group.

8. *Recognition*. The dimension, recognition, is described by the frequency with which a leader engages in behavior which expresses approval or disapproval of group members.

9. *Production*. The dimension, production, is described by the frequency with which a leader sets levels of effort or achievement or prods members for greater effort or achievement.

Questionnaire scales were then made to measure each of these *a priori* dimensions. Application of these scales to a large number of subjects yielded correlations of which a factorial analysis was made by Halpin and Winer (1952, pp. 21-31). This analysis suggested four dimensions which later research has indicated may have general validity. These four factors, and the percentage of the total variance for which each accounts, are as follows (summarized from Halpin and Winer, pp. 27-30):

1. *Consideration* (49.6 percent): This dimension is probably best defined as the extent to which the leader, while carrying out his leader functions, is considerate of the men who are his followers. There is no implication, however, of laxity in the performance of duty, or of superficial human-relations behavior. Individual items indicate that the positive pole of this factor is characterized by warmth of personal relationships, mutual trust, readiness to explain actions, and willingness to listen to subordinates and allow them to participate in decision making.

2. *Initiating structure* (33.6 percent): This dimension represents the extent to which the leader organizes and defines the relation between himself and his subordinates or fellow group members. Scale items with high positive loadings here include "maintains definite standards of performance," "makes sure his part in the crew is understood," "makes his attitude clear to the crew," "asks that the crew follow standard operating procedures," and "assigns crew members to particular tasks."

3. *Production emphasis* (9.8 percent): This represents a cluster of behaviors by which the leader stresses getting the job done. It is probably best described as a way of motivating the group or organization members by emphasizing the job to be done, or the group goal. Questionnaire items contributing most to the definition of this factor were "stresses being ahead of competing crews," "encourages overtime work," "schedules work to be done," and "'needles' crew members for greater effort."

4. *Sensitivity* (social awareness) (7.0 percent): The leader characterized by this factor stresses being a socially acceptable individual in his interactions with other group members. He is willing to accept changes in ways of doing things; he does not "blame" crew members who make mistakes, and he does not make scapegoats of his subordinates; he is sensitive to what goes on in the crew and particularly to conflicts when they occur between crew members.

We have dealt already with sensitivity as a feature of leader behavior determined by personality, and have seen it to have some generality; we shall discuss it again later in another context. The importance of production emphasis appears primarily in the work of Likert (1961) and his colleagues, who have found it useful to discrim-

inate between job-centered and employee-centered supervision. The latter is clearly identifiable with "consideration," while the former, with its concentration on keeping the subordinates busily engaged on the specified task, strongly suggests "production emphasis." It may also be pointed out that Carter's "group-goal facilitation" is similar to "production emphasis."

A number of subsequent studies (Fleishman, Harris, and Burt, 1955; Halpin, 1955) have confirmed that "consideration" behavior and "initiating structure" may be regarded as two major dimensions of leader behavior. Readily drawn parallels with the task and social-emotional leadership differentiation of Bales (1953), and Fiedler's (1964) observations that his differentiations in terms of interpersonal judgments are meaningfully related to task-orientation and consideration dimensions, confirm the Ohio dimensions from widely separated approaches and so give one confidence to claim that these are, indeed, the major dimensions of leader behavior. Furthermore, there is evidence (Fleishman and Peters, 1962; Halpin, 1956) that these are truly independent dimensions and are not mutually exclusive leadership patterns.

THE RELATION BETWEEN LEADER BEHAVIOR AND EVALUATIONS OF LEADERSHIP

The preceding section has described the dimensions of leader behavior derived from descriptions of that behavior made by coworkers or by external observers of small groups. In it we have implied that these results might be generalized to other groups and, indeed, there is evidence that this is so (Fleishman, 1953, 1957). Furthermore, in the course of using leader behavior description in industrial and military groups, it has been shown that leader behavior is stable over time and that there is a real relation between the "effectiveness" of leadership and high scores on two leader behavior dimensions: consideration and initiation of structure. Halpin (1955), indeed, showed that educational administrators and aircraft commanders differed, in an hypothesized direction, on these two dimensions. The administrators displayed more consideration and less initiation of structure than did the aircraft commanders. On the assumption that previous work indicated the need for "effective" leaders to be high on both dimensions, Halpin inferred that educational administrators might profitably engage to a greater extent in the initiation of structure. The clearest findings of relationship between these dimensions of behavior and evaluative criteria of leadership have come from Fleishman and Harris (1962), whose work suggested that "In general, low Consideration and high Structure go with high grievances and higher turnover." In general terms, the relationships between behavior-dimension scores and the two chosen indices of "efficiency" are similar, and our attention might be concentrated on the findings relating to grievances. In either case, it is noteworthy that the relationships are distinctly curvilinear and hyperbolic in form; this means, of course, that critical levels of consideration and initiation of structure can be identified below which and above which, respectively, grievance rates rise sharply, and at the other ends of the scales there are levels above which and below which no improvement in the criterion is observable.

Probably, however, the most useful contribution of Fleishman and Harris in this study has been to examine the interaction effects between consideration and initiation of structure. In the case of grievances, they present these data in a diagram which is reproduced as Fig. 1. From this figure it is clear that consideration is the

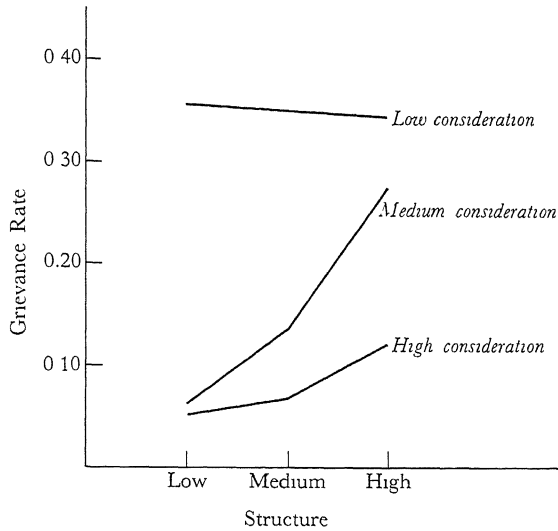


Fig. 1. Combinations of consideration and structure related to grievances. (After Fleishman and Harris, 1962.)

more critical of the two dimensions. More specifically, it suggests that “low-consideration” foremen are always ineffective, while “high-consideration” foremen may indulge in high levels of structuring or task emphasis without any significant loss of efficiency. If we make use here of information which will be presented more fully in our succeeding paragraphs, namely, that initiation of structure is more highly valued by higher management, it appears that we may draw an inference similar to that of Halpin above: that high levels of behavior on both dimensions are desirable in such real hierarchical situations as these, and that if high consideration is first achieved, high initiation of structure may also be had without loss of employee satisfaction and morale. Of course, as Fleishman and Harris point out, it remains a question for research whether group-productivity indices will yield similar results; there remains also the question whether favorable evaluation by superiors will be achievable where behavior is characterized by both high initiation of structure and high consideration.

Our understanding of these dimensions of leader behavior is further circumscribed by the very important set of considerations just referred to, namely, that descriptions of leader behavior differ depending on whether they are made by subordinates or superiors of the leaders or heads concerned. Differences are even greater if *ideal* behavior or the *expected* behavior of the leaders is measured and comparisons are made between upward and downward characterizations.

In a general way, differences in perception of the leader and the leader role, especially as they exist at intermediate levels of a complex organization, have been recognized for a very long time. Attention has frequently been drawn to the conflicting demands made upon foremen and low-level supervisors, and the conflicting role expectations arising from their overlapping memberships in management groups and work teams.

The description of leader behavior as seen from above and below

Several empirical studies have drawn closer attention to these differences and to what appears to be a basic dilemma of leadership in our democratic society. *The American Soldier* (Stouffer *et al.*, 1949, Volume 1, Chapter 8) presented ample evidence that officers and privates hold different attitudes toward authority, leaders, and specific leadership practices. Probably most instructive, however, was the comparison of privates, noncoms, and officers on attitudes toward noncom behavior. Some of the high points of this comparison are clearly brought out in Table 1. As the authors

TABLE 1

COMPARISON OF PRIVATES, NONCOMS, AND OFFICERS ON ATTITUDES TOWARD NONCOM BEHAVIOR (STOUFFER *et al.*, 1949, P. 408)

	<i>Privates</i> (384)*	<i>Noncoms</i> (195)	<i>Officers</i> (31)
Percentage who agree with each statement			
<i>Social relations</i>			
"A noncom will lose some of the respect of his men if he pals around with them off-duty"	13	16	39
"A noncom should not let the men in his squad forget that he is a noncom even when off-duty"	39	54	81
<i>Disciplinarian</i>			
"A noncom has to be very strict with his men or else they will take advantage of him"	45	52	68
"A noncom should teach his men to obey all rules and regulations without questioning them"	63	81	90
<i>Work supervisor</i>			
"A noncom should always keep his men busy during duty hours, even if he has to make them do unnecessary work"	16	22	39
"The harder a noncom works his men the more respect they will have for him"	10	18	42
"On a fatigue detail, a noncom should see that the men under him get the work done, but should not help them do it"	36	37	68

* Numbers in parentheses are the number of cases.

point out, enlisted men are more likely to approve noncom behavior when it is characterized by (1) more intimate social relations with the men, (2) more sympathetic, indulgent policies in the supervision of men, and (3) a lack of emphasis, in social and working relations, on formal status differences between themselves and their men. Further comparisons indicate that there is a noticeable "tendency for the officers to approve a more 'official' point of view on the part of the noncom, and the opposite tendency for the enlisted man to approve informal cooperation from the noncom in escaping official regulations" (Stouffer *et al.*, 1949, p. 408). In terms of the dimensions we have recognized above, it may be said that, in the behavior of their noncoms, privates value membership, consideration, and social sensitivity more than officers do, while the latter value more highly the initiation of structure, following "standard operating procedures," and the like.

A somewhat different form of evidence, though still in a military setting, comes from the work of Roff (1950a, 1950b). In this study, pilots with the rank of captain and above rated subordinates, while pilots with the rank of lieutenant or flight officer rated their immediate superiors. These two sets of ratings were compared, item by item, to discover differences in the descriptions of leadership from above and below and, in addition, factor analyses were made of the correlation matrices representing the inter-item relations under the two sets of conditions. The direct comparison revealed that subordinates rated their "leaders" markedly lower than superiors rated their subordinates on those items concerning interpersonal relations, which had already been shown to have importance in distinguishing between good and poor combat leaders. Items showing the greatest differences in this comparison were (1) sincerity, which referred to straightforwardness and the keeping of promises; (2) impartiality, defined in terms of not playing favorites and being fair to everyone under one's command; (3) concern for personal advantage, which was described as implying lack of rank consciousness, and concern for group performance and for the welfare of fellow group members; (4) ability to mix with subordinates; and (5) willingness to pass on information to subordinates. In other words, Roff found differences in description from above and below to be greatest in our dimensions of consideration, membership, and communication. The factor analyses yield the interesting suggestion that, in spite of the specific differences revealed, both superiors and subordinates do describe leader behavior in very similar terms. The factors, after rotation to oblique simple structure, are remarkably similar, as Table 2 clearly shows.

Evaluations of leadership by superiors and subordinates

While these comparisons imply evaluation, there is a considerable difference between leadership description and leadership evaluation. Hemphill, Siegel, and Westie (1952) developed a "discrepancy" score to reveal the extent to which the reported behavior of a leader deviates from his expected or "ideal" behavior so far as the reporters and judges are concerned. Using a high discrepancy score as an indication that a leader is considered a "poor" leader in that area, they obtained indications that, of all areas of leader behavior, communication may be most important in differentiating "good" and "bad" leaders. In yet another study, Halpin and Winer (1952) considered the evaluation of leader behavior in relation to scores on scales of consideration and initiation of structure. In one part of this study, 52 airplane com-

TABLE 2
FACTORS IN THE DESCRIPTION OF LEADER BEHAVIOR BY SUBORDINATES AND
SUPERIORS (ROFF, 1950b, P 16)

<i>Ratings by subordinates</i>	<i>Ratings by superiors</i>
1. Competence in combat flying	1. Competence in combat flying
2. Fairness	2. Fairness
3. Courage	3. Courage
4. Administrative competence	4. Administrative competence
5. Responsibility (general duties)	5. Responsibility (general duties)
6. Likability	6. Likability (by subordinates)
	7. Likability (by superiors)

manders were rated by instructor teams. These raters were inclined to associate initiation-of-structure behavior, rather than consideration, with effective leadership and other favorable ratings. Further, 29 of these commanders were rated again under combat conditions; it was then found that a global rating of leadership had a partial correlation which was negative but not significant with consideration scores, but a significant positive correlation with initiation of structure. In summary, two trends were recognized: (1) administrative superiors tended to associate “good” leadership with initiation of structure and “poor” leadership with consideration; and (2) the tendency to do this was more marked under combat than under training conditions.

There are further confirmations of this highly important indication that leadership, at a given level in organization, is evaluated in terms of different criteria by those above and below that level. Halpin (1954) observed a similar phenomenon, and Scott (1952) referred to the possibilities of conflict in leaders at intermediate levels of an organization as a result of conflicting demands and expectations of their behavior by superiors and subordinates. His data suggested that the permissive, subordinate-oriented officer was more highly regarded as a leader by enlisted men than by officers. On the other hand, Scott’s units differed in the extent to which there was discrepancy between formal organization charts and perceptions of organization structure by enlisted personnel. Perceptual errors tended to be *lowest* in those units in which the leader was high in authority, level, and rank. Furthermore, these leaders of units with low perceptual error tended to be rated higher in leadership by superiors and by officers than by subordinates and enlisted personnel.

The essential dilemma of leadership in a democracy

The data of *The American Soldier* reveal quite clearly a fact of which many leaders have themselves spoken and written. If an intermediate-level officer is to be a real leader, he has a dual role to play. He must accept the norms and values of superior authority, thus serving as an agent of the impersonal and coercive organization of which he is part. To the extent that he does this effectively, his superiors regard him highly. At the same time, he must win the willing followership of the men under

him, so that he wields over them authority which they themselves have given him. He will be rated highly by the men to the extent that he shows "consideration" for them and to the extent that he mingles freely with them and represents them against the cold machine which is the overall organization. There can be no doubt but that this conflict inheres in the leadership role, especially in a culture which emphasizes the high moral value of "democracy."

This same conflict in the case of the airplane commander has been documented by Halpin and Winer (1952). They show that administrative superiors perceive an antithetical relationship between the leadership behavior represented by the consideration and initiation-of-structure scores. Similarly, the leader himself, in characterizing how he *should* behave, reveals something of this feeling of antithesis. Finally, the men over whom the leader exercises command will have still different expectations of him, and of these he is also made aware. There is a further important point: superiors do not *personally* place a low value on consideration in interpersonal relations. They, too, are taking functional roles in an organization. It has been thought that their greater evaluation of consideration behavior might jeopardize the formal structure of the larger organization. But Fleishman's work (Fleishman and Peters, 1962) now suggests that a reconciliation is possible.

Individual-centered evaluation of leadership

Two kinds of criteria for the evaluation of leadership can be used: (1) those which focus on the behavior of the individual leader and (2) those which evaluate leadership in terms of results for the group. Individual-centered evaluations are made in terms of frequency of choice by other group members, or merit ratings by group members or extragroup observers, or measures of conformance to expected role behavior, or perhaps, self-ratings by the leader himself. Whichever of these methods of evaluation is selected, it will be, as our discussion has just shown, subject to considerable variability as attention is shifted from one level of organization to another and particularly as the major shift from subordinate to superior judges is made. It is partly for this reason that some writers prefer group-centered evaluation of leadership.

Group-centered evaluation of leadership

Here the criteria might be the extent to which group cohesiveness or viscosity is changed, group productivity, and so on. The reader will recall that Cattell (1951) proposed to define leadership in such a way that evaluation would be shifted entirely to measurements of the performance of the group acting under guidance.

There is evidence that individual-centered evaluations are not unidimensional. It has, for example, been reported (Gibb, 1949a) that observers of small groups are frequently aware that the formal officeholder is not the real source of influence in group behavior. Further, there is evidence (Bales, 1953; Gibb, 1950) of poor agreement between various forms of sociometric assessment of leader behavior and, in some circumstances, the correlations between observer ratings and sociometric indices of leadership have not been high. On the other hand, there is not yet available any well-established technique for making group-centered evaluations. But Hemphill, Siegel, and Westie (1952) have been able to show relations between some of Hemphill's group dimensions and discrepancies between expected and reported

leader behavior. They were led to conclude (p. 55) that "group Viscidity is the most sensitive dimension as far as being an index of 'goodness' or 'badness' of group leadership," and that "Polarization may be regarded as a second index of the 'goodness' of leadership." There is, of course, no reason why leadership may not be evaluated by multiple criteria of both categories, and studies which examine the relations among these many criteria of effectiveness are of great importance.

The criterion problem in studies of leadership

In summary, it may be said that this section has been concerned with the familiar criterion problem as it presents itself in studies of group leadership. It is not enough to know what leadership is; we want to know what "good" leadership is and how it is differentiated from "poor" leadership. Evaluation may be in terms of ratings by extragroup observers of the individual and group performances and of individual-group relations, or in terms of similar ratings by participants in the actual group activity, or in terms of self-appraisals by leaders themselves. Our discussion has shown, however, that correlations between these different forms of the criterion measure are not high. The relations of the assessor to the group and to the leader both affect considerably the nature of the assessment made. There seems no reason to believe that such variables will be any less influential when assessments are limited to group behavior or to syntality change.

GROUP FACTORS IN RELATION TO LEADERSHIP

Patterns of behavior which constitute effective leader behavior in one group may not be effective in another. As group goals change, leadership needs change and different forms of leader behavior are demanded. Effective leadership in group discussion may not be effective leadership in an outdoor building operation. A number of research studies have examined the relations between leader behavior and such group factors as organization structure, pattern of communication, size, cohesiveness, personality content, and the like.

ORGANIZATION. FORMAL AND INFORMAL

Organization implies differentiation of roles, including leadership roles. It is noticeable, however, that in newly formed groups organization is fluid; that is, there is redifferentiation of roles and redefinition of rules and traditions whenever the situation changes. In lasting associations these things tend to become formalized, and among the important group traditions are the permanent distribution of roles and the stability of rules. Such *formal organization* does not, however, embrace all the patterns of relatedness or all the group definitions of roles and rules which are observable in an association. There is, side by side with the formal, charted organization, an *informal organization*. When one examines formal organizations in actual operation, one finds that the individual members do not, in all respects, act in accordance with the specific definitions of their roles and offices. And this is to be expected, because the specific social situation and the personalities of individuals cannot be anticipated by a formal organization. The personal relations that develop among members of an organization

themselves achieve stability and affect members' expectations of one another. This informal organization contains the primary groups, cliques, and congeniality that develop within the lasting association, whether it be team, political group, shop, or office. Informal organization is the source of much social control. What is more, its values, its power structure, and its behavior expectations may be at variance with those of the formal organization, and may be perceived to be so by the members themselves.

Officeholders in any formal organization are confronted with these discrepant formal and informal expectations of themselves. There is evidence in the work of Scott (1952) and of Stogdill and Koehler (1952) that the morale and effectiveness of an organization depend on the extent of these discrepancies. The clarity of members' perceptions of their reciprocal relationships and responsibilities is crucial, regardless of whether these mutually recognized relationships correspond to formal structure. Furthermore, the clarity of such perceptions is seen to depend, in part, on the leader behavior of immediate superiors. The perception of organization structure is apparently clearest when the leader is of high rank, is rated highly by his superiors, devotes his time to consultation with his associates, works predominantly with peers, devotes time to inspections of organization, and himself perceives organizational relationships clearly. The implication is that within a steeply hierarchical organization the most effective leader is one who recognizes the structure and conforms closely to the expectations of organization members.

Many researches, as we have seen, indicate that group members prefer a leader who shows "consideration" for them and sides with them in any conflict with higher echelons of the organization. But Pelz (1951) suggested that this is so only in small work groups of ten or fewer. In large white-collar work groups, he found that employees were less satisfied with such a supervisor and revealed a preference for the supervisor who identified more closely with higher management. The general conclusion of this study was that workers want their leaders to assist them in goal achievement. The extent to which a supervisor can do this is determined by his "influence" on superior echelons of organization. The worker does not want less consideration behavior but, recognizing the organizational context, he knows that he must satisfy himself with less "membership" behavior from his supervisor in order that the supervisor, in turn, may interact more freely with higher levels of supervision and thus exercise greater influence on them. This situation at least hints at some of the differences one would be likely to find among the expectations of leaders, as these are determined by formal and informal organization.

Even with small groups of six, however, Wolman (1953) found that election to leadership depended on "perceived power" rather than on "acceptance." *Power* was defined as the ability to satisfy needs or to deny such satisfaction, and *acceptance* as the readiness to do so. In all groups Wolman saw leadership as a general function of power and acceptance. However, in what he called the "instrumental group," which people had joined because membership was perceived to help in the attainment of personal goals, he found that a disliked but "powerful" person was more frequently endorsed as leader than a more friendly one whose contribution had been less.

Likewise, Bales (1953), also using small groups, found leadership more closely associated with contribution of ideas and with guidance (that is, with power) than with liking (or acceptance). Bales's groups, like Wolman's, were instrumental groups

insofar as their participants had joined the group, not for friendly company, but to earn money or to enhance their course grades. Both of these investigations approach the conditions of Pelz's study in that the group task has been set by higher authority within a hierarchical organization. Thus a general conclusion seems warranted, that, within an organizational setting, perceived power is more closely related to leadership than is acceptance or "membership" behavior.

Formal and informal leadership

Formal leaders are defined as specific officeholders, and informal leaders are defined in terms of choice status, using some criterion of influential behavior. That the group influence and the actual behavior of formal leaders are different from those of informal leaders, there can be little doubt. Data from *The American Soldier* (Stouffer *et al.*, 1949, p. 471) indicate that discussion groups led by "informal" (that is, chosen) leaders were much more effective and satisfying than were those led by equally competent but unchosen men. White (1950), from a study of the relations between formal and informal leadership in a New York rural community, concluded (p. 55): "Informal and formal relationships are not closely related to each other; they are simply different." In White's explanation of why informal leaders were seldom found as formal officeholders, there was one notable factor. There was evidence that the more independent community organizations were of control by higher authorities, the more they were likely to have, as formal officeholders, men who ranked high with respect to informal influence. In other words, structured formal organization may have inherent in it barriers to the assumption of office by those leaders of the informal organization who could contribute most to organization efficiency

Bureaucracy and leadership

Formal organization, particularly in large groups, involves not only a differentiation of role and function, but also, and inevitably, differential degrees of participation in the affairs of the group. There emerge not a leader and his group, but a leader, an administrative staff (or bureaucracy), and a group of relatively inactive members. Bureaucratic organization changes significantly the relations between a formal leader and his group. The leader of a large bureaucratic organization cannot be so representative in his behavior as can the informal leader of a smaller primary group. His very position in the bureaucracy gives him a different perspective, and of course, the longer he occupies this office, the more different that perspective is likely to be, since he has access to new kinds of knowledge and is subject to various extragroup pressures. Furthermore, his persistent occupation of this role casts him into new membership and reference groups and confers upon him a status which he would not otherwise enjoy. It may thus become one of his primary motives to maintain himself in office. His interests and those of his group may diverge. Various restraints and devices, as Selznick (1951) has pointed out, must be employed toward maintenance of power. In general, it remains true, however, that a leader who gets too far away from the interests and attitudes of members in such an organization may lose his following and eventually his power and status. The principles of leadership discussed in this chapter remain relevant to the analysis of bureaucracy but are not sufficient to represent the special complication of bureaucratic hierarchies.

Leadership and organization

Leadership and supervision are highly important factors in determining organization efficiency. A number of studies (Likert, 1961) have pointed to the close relation between style of supervision and the productivity and morale of work groups. The men with the highest morale were those who perceived their supervisors as performing a number of broad supportive functions. Stogdill and Koehler (1952) and Fleishman and Harris (1962) also found morale and effectiveness of an organization to be correlated with leader behavior. Furthermore, the former also suggested that differences of organization may be related to differences in the personalities of the commanding officers. A more "socially expansive" organization seemed to be largely a function of the warm, friendly, affable personality of its head.

Merei (1949) reported an experiment with nursery-school children which showed that the leader does not always determine organization and organization performance. Merei and his coworkers observed a large number of children and obtained records from which they could identify leaders and followers. Four or five who had been identified as followers, and who had been selected in such a way as to minimize their difficulty in forming a group, were then put together in a separate room. When observers could recognize the criteria of group formation, namely, development of their own rules, habits, and traditions, a leader was placed in the group. This leader was usually an older child who, in the original observations, had shown himself to give orders more often than follow them, who was imitated more often than he imitated others, who attacked more often than he suffered attack, and who had shown initiative in play. Merei's observations were that these young groups absorbed such a leader, forcing their traditions upon him. The leader's own undertakings either remained unsuccessful or gained acceptance only in a modified form suiting the traditions of that group. The leader now was forced to follow the behavior of those who in the pretest situation had followed him. This is not to say, of course, that the introduction of the leader had no effect on these small organizations. In many cases, though the leader was forced to accept the group's traditions, he still managed to carve out for himself a leader role, but he led the group in the direction it would have taken had he not been there. He was able frequently to modify means, but he had little influence in setting or changing goals.

COMMUNICATION SYSTEMS

One feature of a group which affects its leadership, as well as all other aspects of its performance, is the communication system or pattern available to it. It is impossible, of course, to exaggerate the importance of communication in group behavior. Communication is *the* process by which one person influences another, and is therefore basic to leadership. Organization implies some restriction of communication, or at least a patterning in such a way that some communication channels are more readily available than others. And it is to be expected that restrictions on communication can affect perceptions of leadership. This has frequently been observed in industrial and political organizations and is generally recognized as one of the techniques by which bureaucrats retain their offices.

Bavelas and his associates (Leavitt, 1951) brought out clearly, in laboratory groups, some of the relations between communication pattern and leadership. By

placing restrictions on groups of five persons, so that both the nature and frequency of communication could be controlled, they showed that position in a communication pattern determines largely both the assumption of certain group functions and the probability of being perceived as a leader. Certain important functions tended to be served by people occupying more central positions in the communication network. And the unanimity of opinion, given by participants, as to who was the leader, increased as the imposed pattern determined greater differences between the members with respect to freedom of communication. Particularly was this true as the most central man became more clearly differentiated from the next most central. Apparently, differential restriction on communication in a group determines behavior by limiting independence of action, thus producing differences in opportunity to influence others or to be perceived by them as doing so. Subsequent work, both in the United States and in other countries, has confirmed and extended these findings (Mulder, 1960a, 1960b; Shaw, 1964). For example, Mulder (1960a) was able to integrate findings which seemed to give different relationships between structure and group efficiency, depending on task complexity, by substituting an examination of decision structure for that of topological structure. His hypothesis that groups with more centralized decision structures would perform more efficiently was confirmed for both simple and complex tasks. This finding has particular relevance for the student of leadership insofar as it confirms the significance of having in an opportune position a person who will perform the core decision-making acts of leadership.

VARIABILITY IN GROUP DIMENSIONS

The pioneering work of Cattell and Wispe (1948) and Hemphill (1949) in the empirical determination of independent dimensions of groups led to several studies in which leadership behavior was studied in relation to variability in the several independent dimensions.

Among the observations of Hemphill's original study (1949) was the fact that behavior associated with being considered an adequate leader was also associated with the general level of pleasantness of group membership (the dimension of hedonic tone) and with the tendency of the group to function as a unit (viscosity). In some groups, as Hemphill suggested, it may be that a leader's most important functions are those of maintaining group membership as a satisfying experience for the members and of facilitating group rather than individual action.

The size of the group is a variable which affects leadership. When leader behavior in groups having 31 or more members was compared with that in groups of 30 or fewer, it was found that, as the group became larger, (1) demands on the leader's role became greater and more numerous and (2) tolerance for leader-centered direction of group activities became greater (Hemphill, 1950b).

Maas (1950) recorded that leaders were more involved, both more active and more in demand, in open groups (that is, those which focused on an activity program, with relatively informal meeting procedures, and with membership open to all comers). Furthermore, this dimension (permeability) of groups had some relation to leader behavior and personality. In "open" groups imposed leaders, whose personalities were characterized by a tendency to project blame, showed desirable changes in social perception; that is, they showed less distortion of perception by judgments and more perception with causal inference. On the other hand, these same desirable changes

occurred in the behavior of leaders who tended to introject blame when they were placed in "closed" or clearly structured groups.

There are indications that less homogeneous groups have older leaders. Another characteristic of groups related to leader's age is "control." Groups with higher control scores also have older leaders (Hemphill, Siegel, and Westie, 1952).

Groups which have had a longer group life have leaders who engage in less membership behavior, that is, who mix less with group members. There is, however, some slight negative correlation between age and the membership behavior of leaders, and this may mean simply that older leaders tend to engage less frequently than younger leaders in informal interaction with other group members (Hemphill, Siegel, and Westie, 1952).

Viscosity is associated significantly with nearly all dimensions of leader behavior, as well as with adequacy. It is closely associated with the communication of the leader and this, as we have seen, may be the most important behavior area with respect to the evaluation of leadership. Viscosity is also associated positively with initiation, membership, recognition, integration, and organization behaviors, and negatively with domination. These data suggest again that viscosity is the group dimension most sensitive to leader behavior, and emphasize Hemphill's earlier conclusion that maintenance of viscosity may be the primary function of group leadership.

Group control and leader domination are associated, as might be expected, since they are both related to restriction of members' freedom. There is also a significant negative correlation between control and membership. Group stratification bears very similar relations to domination and membership and has, in addition, a positive correlation with organization behavior of the leader. These relationships may well be part of the same pattern.

Other associations which suggest this double-aspect concept are those of the degree of mutual acquaintance among members (that is, intimacy with communication, integration, and membership), those of goal orientation or polarization with initiation, organization, and recognition, and that of the relation between the group's formality of procedure and the organization behavior of the leader.

Hemphill's data further imply that the greater the primary significance of a group for its members, the more restriction of individual freedom they are ready to accept, and the more they look to their leader to assume "autocratic" control. Other studies (Cattell and Stice, 1954; Gibb, 1949a) have hinted that an "autocratic" leadership technique is found in association with such group behavior characteristics as orderliness of performance, goal direction, and cohesiveness or viscosity. It may well be, however, that some of these relations are dependent on the leadership ideology of the groups under study. Gibb's (1949a) student and military groups showed a marked difference in respect to the direction of relationship of autocracy with organization and member freedom.

The nature of the task upon which the group is engaged appears also to affect this relationship, as Haythorn's data testified (1952). Aggressive, self-oriented, authoritarian participation on the part of one member of a group tended, on reasoning and discussion tasks, to reduce group morale, but on a mechanical assembly task, to increase it. Such leader behavior decreased group friendliness in all task situations, but it reduced cohesiveness and cooperativeness only in the reasoning and discussion situations.

SPECIFIC CONSIDERATION OF THE FOLLOWERS

It has long been a common belief that one highly important determinant of group behavior consists of the personalities of the followers in any group. Though there have been short periods in the history of group dynamics when this well-established belief seemed threatened, there is undeniable evidence of its validity. Cattell, Saunders, and Stice (1953) expressed surprise at finding a large part of group behavior variance accounted for by population variances, in other words, by the personality of the group members.

The Illinois studies (Cattell and Stice, 1953; Gibb, 1949a) suggested that a more "autocratic" form of leadership is to be found in those groups in which the mean intelligence of members is high, in which members are more emotionally mature, in which members have a high mean "radicalism" score, and in which members are heterogeneous with respect to dominance needs and with respect to a sophisticated intellectualism.

TABLE 3
CORRELATIONS BETWEEN RATED BEHAVIORAL TRAITS OF SUBJECTS AND OF THE
SUBJECTS' COWORKERS MECHANICAL ASSEMBLY TASK (HAYTHORN, 1952)

Rated traits of subjects	Rated traits of coworkers										
	Aggr	Init	Pres	Conf	Subm	Eff	Soc	Ins	Auth	IndS	Lead
Aggr	-0.89	-0.73	-0.85	-0.83	0.83	-0.57	-0.21	-0.75	-0.90	-0.77	-0.89
Init	-0.85	-0.82	-0.85	-0.78	0.84	-0.51	-0.10	-0.62	-0.75	-0.70	-0.80
Pres	-0.84	-0.69	-0.83	-0.78	0.84	-0.30	0.00	-0.68	-0.76	-0.80	-0.79
Conf	-0.80	-0.83	-0.84	-0.85	0.79	-0.42	-0.23	-0.67	-0.74	-0.69	-0.81
Subm	0.87	0.88	0.87	0.87	-0.85	0.48	1.7	0.73	0.83	0.69	0.84
Eff	-0.71	-0.69	-0.68	-0.70	0.74	-0.15	-0.13	-0.39	-0.64	-0.66	-0.64
Soc	0.10	0.14	0.03	0.03	-0.21	0.01	-0.65	0.09	0.04	0.25	0.09
Ins	-0.71	-0.73	-0.78	-0.76	0.76	-0.26	0.01	-0.53	-0.57	-0.71	-0.67
Auth	-0.86	-0.72	-0.81	-0.78	0.80	-0.37	-0.23	-0.71	-0.90	-0.75	-0.85
IndS	-0.80	-0.79	-0.83	-0.80	0.76	-0.48	-0.12	-0.75	-0.75	-0.69	-0.90
Lead	-0.88	-0.80	-0.90	-0.87	0.83	-0.46	-0.10	-0.77	-0.81	-0.75	-0.89
N = 16											
$r_{0.05} = 0.49$											

With the aid of a well-planned research strategy, Haythorn (1952) obtained significant findings in this area. His 16 subjects were run in 20 groups of four, on reasoning, mechanical assembly, and discussion tasks, in such a way that each subject worked with each other once and only once. It was thus possible for him to determine the influence of one variable, such as aggressiveness, on the part of one member of a group, on the aggressiveness or on the leadership of other members, and so on. One of the most striking results of the study is represented in Table 3, which shows the correlations between traits of subjects and of those subjects' coworkers as rated by trained observers. Definitions of the rating-scale variables used in this table are as follows.

1. *Aggressiveness.* the degree to which the individual's behavior was directed toward the physical or psychological injury of other group members.
2. *Initiative.* the degree to which the individual was instrumental in starting the group in new phases of the task solution
3. *Prestige:* the degree to which other members of the group seemed to respect or "look up to" the individual being rated
4. *Confidence:* the degree to which the subject seemed assured of his ability to cope with the group situation
5. *Submissiveness.* the degree to which the subject deferred to or took directions and orders from other group members.
6. *Efficiency:* the degree to which the individual's behavior in the group contributed to solutions of the problems presented.
7. *Sociability:* the degree to which the individual's behavior was directed toward expressing friendly social relationships with other group members.
8. *Insight.* the degree to which the subject was able to see relationships between various aspects of the problems presented, and thereby arrive at correct solutions to the problems.
9. *Authoritarianism.* the degree to which the subject gave orders and directions to other group members.
10. *Individual solution:* the degree to which the subject's behavior indicated an attempt on his part to arrive at solutions to the problem independently.
11. *Leadership:* the degree to which the subject was responsible for moving the group toward the common goal of task solution

This table for the mechanical assembly task is not significantly different from similar tables for the other two types of group activity. In particular, it will be observed that if one member of a group is aggressive, self-confident, interested in an individual solution to the task, and shows initiative, then the other members of the group show less of such behavior than they otherwise would. As one member of the group engages in more self-oriented, authoritarian leadership behavior, the other members of the group engage in less of such behavior. According to Haythorn, when one subject behaves in such a way as to create interpersonal tensions, his coworkers act to decrease these tensions, or at least to prevent an overt conflict. Once again we are faced with clear evidence of the interactional nature of leader behavior, this time with an emphasis on what might be called compensatory group mechanisms which suggest the applicability to group behavior of the concept of homeostasis.

Sanford (1950, 1952) was among the early workers to examine specifically the manner and the extent to which differences among followers affected leadership. On the basis of a brief scale of authoritarian-equalitarian attitudes, relations between this trait and many factors associated with leadership were examined. In summary, he found that authoritarians and equalitarians differed in the kind of leadership they demanded and in their responses to leader behavior. Authoritarians preferred status-laden leadership, with strong authority and direction on the part of the boss. Equalitarians, on the other hand, were able to accept strong leadership if the situation demanded it, but they had no need for powerful authorities. Authoritarians cared

little for personal warmth in their leader but they did demand that he contribute to their locomotion toward group and individual goals. Equalitarians were inclined to evaluate leaders in terms of their "human-relations" behavior and their group-process, rather than goal orientation. The possibilities of frustration and conflict are clear. Authoritarians are dissatisfied and uncomfortable under a nondirective leader. A group of equalitarians could be expected to go into a decline under a rigid and directive leader.

Haythorn *et al.* (1956b) subsequently examined very similar relationships very thoroughly, though without reference to Sanford's work. Using the California *F* scale, they found that high-*F* and low-*F* leaders did behave differently, but that these differences were contingent upon whether the members of these discussion groups were high- or low-*F*. Leaders with low-*F* members were found not to engage in as much autocratic behavior as when they had high-*F* members. And leaders with high-*F* members took more decisive, directive action, presumably under the influence of the expectations of such action held by their group members.

THE SITUATION IN RELATION TO LEADERSHIP

Usage of the term "situation" varies from the more or less literary "combination of circumstances at a moment" to the technical emphasis of the definition given by Thomas and Znaniecki (1947), for whom the situation concept embraced both (1) the objective conditions under which action occurred and (2) the values and attitudes which characterized the individual group members who participated in group activity and which consequently not only partially determined that activity, but were used by these same members to evaluate its success.

In the situational approach to the study of leadership, the term connotes at least four categories of behavioral determinants which are not all forecast by the above definition. The situation includes: (1) the structure of interpersonal relations within a group, (2) group or syntality characteristics such as those defined by the group dimensions already discussed, (3) characteristics of the total culture in which the group exists and from which group members have been drawn, and (4) the physical conditions and the task with which the group is confronted.

Leadership is always relative to the situation. So far as the preexisting attitudes of the group members are concerned, we have already seen this to be so. It has frequently been reported that officer trainees judged good in officer candidate school are not necessarily judged good in combat. And naval officers rated highly at sea are not always given good efficiency ratings ashore, as Flanagan's (1949) correlation of +0.10 testified. With respect to laboratory groups, Carter and Nixon (1949) found that the correlation between leadership scores was +0.64 for intellectual and clerical situations, but was only +0.40 between intellectual and mechanical, and +0.30 between clerical and mechanical situations. Gibb (1947) recorded his observations that the leadership of small traditionless groups shifted frequently as the group moved from one phase of a problem to another.

Generality or specificity of leadership

It is not claimed, of course, that this succession of leaders with situation change represents a change of role occupant and not of the role itself. Quite the contrary. Observation of small groups suggests that leadership may inhere in a variety of role

patterns. As the situation changes, different roles become leadership roles, and because of individual differences among group members, the likelihood is that different members will be perceived to fill these roles best. It is possible, of course, that in some groups personnel rotation will not accompany role shifts, and that minor situational changes may make but slight demands for role modification, thus permitting a present leader to modify his behavior sufficiently to retain leadership. As Carter (1953) has pointed out, the early positions of Jennings (1950) and Gibb (1947), which tended to swing thinking in the direction of this form of situationism, were correct only in an *absolute* sense. And Carter was, of course, correct when he claimed that there are task families within which leadership is more general than specific.

This conclusion was derived from a study in which the same groups were observed at six different tasks: a reasoning task, an intellectual construction task, a clerical task, a discussion task, a motor cooperation task, and a mechanical assembly task. Leadership ratings for each member in each task were intercorrelated by task and a factor analysis was made. This analysis indicated the existence of two families of tasks, so far as leadership demands were concerned. One of these families was characterized by ability to lead in intellectual task situations, and the other by ability to lead in situations where the task called for manipulation of objects.

For ten groups, each consisting of ten male students, Gibb (1949a) calculated intercorrelations between eight different group tasks with respect to ratings of leadership. Though the tasks varied from mechanical construction, through intellectual problem solving and clerical tasks, to discussion of highly emotionally toned issues, the coefficients were all positive and all significant. These coefficients (tetrachoric) were, in fact, normally distributed about a mean of +0.67, which may be regarded as a summarizing coefficient. Such a coefficient is high enough to indicate that, within the variation provided by the different tasks, leadership is not entirely specific to the situation. Neither is it wholly a general factor. Bell and French (1950), however, found that in their groups leadership status seemed to be rather highly consistent despite the situational changes involved.

These demonstrations of families of situations within which leadership roles may be *relatively* consistent leave untouched the practical and theoretical importance of the concept of situational specificity. Many observers confirm the tendency for leadership to pass from one individual to another as the situation changes. In the major situations of everyday social life we would expect just this. Even within the structure of a naval organization, Stogdill and Koehler (1952) observed that sociometric choices were likely to be concentrated on the department head who was at the focus of the activities and objectives of the organization at the time of the study. As the activities changed, the focus of choices changed to the department which was most critically involved in the new tasks to be performed. Furthermore, as they compared organization activities and leader behavior in port and at sea, Stogdill and Koehler suggested: "A factor analysis would probably yield several factors common to the in-port and at-sea tables, and one or two factors specific to operations in port" (p. 51).

The important suggestion appears to be that a group member achieves the status of a group leader for the time being in proportion as he participates in group activities and demonstrates his capacity for contributing more than others to the group achievement of the group goal. As was mentioned earlier, the situation is especially liable to alter through changes in goals, changes in syntality, changes in interpersonal relations, the entrance of new members and the departure of others, pressures

from other groups, and so on. Since individual personality characteristics are, by contrast, very stable, it is to be expected that group leadership, if unrestricted by the conscious hierarchical structuration of the group, will be fluid and will pass from one member to another along the line of those particular traits which, by virtue of the situation and its demands, become, for the time being, traits of leadership. This is why the leader in one situation is not necessarily the leader, even of the same group, in another, different situation.

PSYCHODYNAMICS OF THE LEADER-FOLLOWER RELATION

Obviously, the relationship between leader and followers must have a credit balance of psychological satisfactions to both leader and led; it must be rewarding in both directions, since both leader and followers must be acting through this relationship to maximize individual satisfactions. Rashevsky (1947) submitted such an interactional relationship to mathematical analysis and showed how the relationship itself might serve to increase individual satisfaction. However, we have to account not only for the dynamics of the smoothly working relationship once it is firmly established, but also for the manner in which the leader-follower relation is brought into existence.

This problem has sometimes been considered in terms of the motivations of leaders, as if it were the leader's willpower and decision that brought the relationship into existence. Our previous discussion must have made it clear that this is an untenable view. Of course, it is important, as Krech, Crutchfield, and Ballachey (1962) suggest, that the group have within its membership a person who needs the leadership role and is qualified to occupy it. We can perhaps simplify this discussion if we differentiate between the satisfactions of leadership, the satisfactions of followership, and the emotional relations that may exist between leader and follower.

THE SATISFACTIONS OF LEADERSHIP

Leaders in almost every form of activity are prominent persons and come easily to the attention both of group members and of those outside the group. It is not, therefore, surprising that a great deal of history has been concerned with recording the behavior and speculating on the motives of leaders. A preponderance of information about a man like Napoleon Bonaparte and a corresponding dearth of reliable data concerning the details of those situations in which he rose, step by step, to the throne of France, inevitably leaves the impression that the all-important factor in his success was the man himself. Consequently, most writing about Napoleon's leadership has been concerned with his motivation. What constitutes motivation to lead?

Economic reward. Thorndike (1940) presented data relevant to the hypothesis that persons seek roles of leadership and eminence because of the economic reward, and that the financial incentive is sufficient to make men willing to expend the energy and adopt the self-discipline which the role may require. He found the average income for the six most outstanding leaders in each of a large number of occupational fields for a given financial period. Although it is true that these men were highly rewarded, the data revealed such wide variability in the material rewards that we suspect the existence of some more stable incentive running through all striving for eminence, creative expression, or leadership.

Primitive dominance. Could it then be that there is in every man, if not in every woman, in our society at least, some basic urge to dominate, control, or influence his fellows? Many of those who stress a dynamic force in leadership argue that the relation of leader and follower is not so much an expression of acquired attitudes as of an innate primitive dominance-submission need. Maslow (1936) has shown that in any social group of individuals—human or animal—a hierarchy of dominance feeling, behavior, and status soon develops, and that the dominance status of any individual is fairly constant. Certain individual characteristics such as sex, bodily size, energy, bearing, and age have been shown, among primates, to be closely related to dominance. “Pecking orders” have been charted for domestic hens and for a great variety of other animal species. In addition, Hanfmann (1935) has revealed a similar dominance structure in a group of children, while Deutschberger (1947) has pointed to this characteristic in gangs. Mann’s (1959) review, as we have seen, has established that, on the whole, leaders are more dominant than nonleaders. The maintenance of this relation depends on the ability of the leader to retain control of power, to retain prestige, and to be impressive. Since by this hypothesis the followers, too, must have dominance needs, even if less strong, some explanation is required as to their means of satisfaction. Several possibilities present themselves. Such satisfaction may occur in relation to other objects, or may come about vicariously through identification with the leader or with the total assertive group itself, or may occur directly by virtue of the hierarchical organization of the group which gives to almost every member both a submissive and a dominant role.

Power over others. Psychoanalytic theorists have frequently claimed to recognize a father substitution in the attitudes of followers to their leader. There seems to be no doubt that in some circumstances the leader is an object for transference of long-established feelings of dependence and submissiveness by followers in such a way that his power pervades very large areas of their lives. What is the motivation of the individual who accepts responsibility for these dependent persons? There does seem to be evidence that the leader, on his side, gains satisfaction for a desire to express parental affection. Many leaders make benevolent and paternalistic use of power, and some seem to enjoy the embarrassment thus caused in their more independent subordinates. Some leaders appear to devote themselves largely to the service of others, and to gain satisfaction from a feeling of power over them and their lives. Gerard (1957) found that subjects who were told that they were the bosses and could tell others what to do were more highly satisfied. Rosen, Levinger, and Lippitt (1961) also observed a variety of indications of satisfaction among those group members who had greater power. Mulder (1960b) examined data obtained in the now familiar communication-structure experimental situation (Leavitt, 1951; Shaw, 1964) and was led to the conclusion that the exercise of power (determining the behavior of another) is a primary determinant of satisfaction; he inferred that the higher degree of satisfaction regularly found in these experiments among central persons is, in fact, a function of the exercise of power. Indeed, Collins and Guetskow (1964) offer it as an established proposition that “a position of high power will produce satisfaction.” Lee (1950) has taken the position that social science must recognize the power seeker in society and must recognize, too, society’s need of persons so motivated. As he says, however, this is not to assert, as Nietzsche did, that life itself is a will to power. It admits simply that there are group members who *need* power and who by virtue of this need are driven to initiate change. It remains true that

there are "societal forces and limitations which transcend any will-to-power of individuals" (p. 673).

An interesting experimental verification of this fact was provided by Beatrice Shriver and quoted by Carter (1952). Groups of four were observed in an emergent-leader situation and leadership ratings were made for each member. That member having a rating closest to the group mean was then told, prior to the second session, that he had shown himself to have most leadership potential and that he should try to assert himself. This he was able to do, actually showing more leader behavior than the man formerly rated highest. At the third session, this same man was appointed leader in the group's presence and was asked to continue as a leader. Again, his leadership ratings increased over the previous session. Then, at the fourth session, he was given still more power. He was handed four checks, one for four dollars which he was instructed to keep, another for four dollars, one for three, and one for the regular two-dollar fee. He was asked, in front of the others, to distribute the checks in accordance with the individuals' contributions to the group. At this session the leader behaved much less like a leader than before. Apparently he had been given too much power, and it embarrassed him. He was stunned, irate, and resistant in turn, and was most likely eventually to delay decision making, and to reverse decisions many times, or to require the members to flip coins or shoot darts to decide the distribution. It seems that there is a limit to the magnitude of the ordinary individual's desire for power over others.

Status needs. The desire for prestige or status is so widespread that it appears on many lists of fundamental instincts or drives, but it is better described as a motive acquired by a generalization process from specific situations in which pleasure has been experienced in association with a position of high status. The higher levels of status are believed to be, and usually are, the more pleasant to occupy. They involve more power and influence and they may bring higher financial returns. But the important factor in considering status as a motive in itself is that higher status gives entrée into attractive associations; it makes possible friendships and group memberships which, in turn, tend to maintain status and thus to satisfy important ego needs. This may indeed be one of the most important, and most general, satisfactions to be had from occupancy of a leader role in any group.

To some extent the significance of this motive is apparent in sociological records of leadership in organizations. Leadership does not enjoy high status in all trade unions, for example. Where it does, there seems to be a tendency to get more efficient leadership. But the relation is by no means so simple as this. Workers who become union leaders must give up some, if not all, of their statuses acquired on the job. Willingness to accept union leadership is, therefore, a function of a ratio of statuses. Furthermore, effective leadership, as we have seen, is dependent on a fluidity of this role which permits personnel rotation when the situation undergoes a marked change. Whether a union official is willing to vacate his newfound status and return to the job also depends on a ratio of statuses. In relatively low-status industrial organizations, therefore, the pattern is one of tenure of leadership roles, because a severe loss of status would be suffered by return to the job. Unions of workers in high-status jobs have, on the other hand, a very unstable leadership, or leadership by the comparatively inept. Consideration of the ratio of statuses helps greatly in understanding the prevalence of lawyers and industrial magnates in political office, where permanence cannot be guaranteed.

A complex of pressures. Hemphill (1961) reported a series of four experiments designed to unravel some of the complexities in the question "Why do people attempt to lead?" The experiments provided an answer in terms of a complex of personal and situational variables. Hemphill found that individuals were encouraged to attempt to lead by (1) the promise of large personal rewards if and when the group task was accomplished, (2) a personal conviction that accomplishment of the task was possible by working at it, (3) personal acceptance by other group members and their approval of early or prior attempts to lead, (4) a task which required a high rate of group decisions, and (5) possession of superior knowledge or competence relevant to the accomplishment of the task. Furthermore, the extent to which each of these pressures appeared to produce attempted leadership depended on the balance struck between it and its opposite. For example, the extent to which prior success in leadership encouraged a person depended on the extent to which he perceived others as having had similar success and so enjoying higher status than his own. "Attempting to lead," Hemphill concluded, "presents the possibility of receiving certain negative sanctions, probably the most severe being a rejection by fellow members of the group" (p. 214); "to be liked and accepted by the group may be a more important consideration than task accomplishment" (p. 212). Probably the principal significance of this research by Hemphill, however, is its demonstration that the perception of the task by group members, and especially by the potential leader, is "an important consideration in the complex of motivational factors related to the attempt to lead."

A variety of confirmations and extensions of Hemphill's position is available. Bass (1961) observed that frequency of attempts to lead is influenced by previous attempts and the similarity of these to this situation, by one's ability to cope with the group's problem, and by high self-esteem and self-accorded status. Pepinsky, Hemphill, and Shevitz (1958) found that conditions of acceptance were more conducive to attempts to lead than conditions of rejection. They reported that such situational factors were more important than major needs like need achievement and need affiliation. A similar result was obtained by Chaney and Vinacke (1960) who found that perceived differences in power were a very compelling determinant of behavior, outweighing motivational differences. However, in this study, persons high in need achievement managed to improve their positions relative to the other participants. Cartwright and Zander (1960) suggest that the determinants of initiative in leadership include self-confidence, high ego strength, high need achievement, and hunger for power. It may well be that personality motivational factors account for much more variance of attempted leadership than of its effectiveness.

UNSUGHT LEADERSHIP

The preceding discussion has implied that leaders are motivated to *seek* as well as to enjoy leadership. This is not necessarily so. There are recognized leaders who may gain satisfaction, especially for status needs, from their leadership, but whose occupancy of the role has been unsought. It is even possible to imagine leaders, especially in science and in the creative arts, who gain little or no satisfaction from their high status but whose positions have been incidental effects of other motives. It may be said, of course, that the great artist or the eminent scientist does not have a group to lead in the sense that a military officer or even a union official has. But the influence of such a man in an interactional situation is undeniable.

However, even within small groups there is an observed correlation between leadership and creativity. Creation, particularly of the beautiful, is highly valued and attention turns to the creative group member. At least within the area of his creative genius he will be followed, imitated, and admired. Our valuation of eminence, prestige, and status itself is such that a man will often be followed in an area quite beyond that in which he makes his contribution. He thus becomes a kind of "projected" leader, despite the fact that he may be able to contribute no more than the average member in these new situations.

THE SATISFACTIONS OF FOLLOWERSHIP

It would be a mistake, as Hollander and Webb (1955) have shown, to think of leadership and followership as mutually exclusive concepts. Indeed, as the studies reviewed in this chapter amply indicate, each of these is but a transient status—either leader or follower at any one time may, at another time, be in the other role, but equally, at a third time, he may be neither leader nor follower but simply an uninvolved group member (though it is, of course, necessary that all members will at some time be followers or they will forfeit their membership). Leaders and followers must be thought of as collaborators in the accomplishment of a group task. In fact, as Hollander (1961) pointed out, leaders and followers frequently exchange roles and observation has shown that the most active followers often initiate acts of leading.

The work of McClintock (1963) lends further strong support to this position. In examining behavioral differences between leaders and nonleaders, he found it necessary to differentiate between nonleaders who were joiners and those who were nonjoiners in terms of their performance in earlier group experiences. The joiners, he found, had more in common with leaders than did nonjoiners. Nelson (1964), in a study of 72 men who wintered-over at Antarctic scientific stations, confirms Hollander's position. He found that liked leaders and liked followers were more similar in attitudes and behavior than liked and less-liked leaders or than liked and less-liked followers. Further, he suggested (p. 167) that the core, and probably the cause, of the similarity between liked leaders and followers was their common orientation to teamwork and their respect for various forms and sources of authority.

It is largely against such a background of the conception of followership as an active role in the accomplishment of a group task that we can explore the satisfactions of following. The permanence of leader-follower differentiation within groups is sufficient proof that there are, in this relation, rewards for those who follow, just as there are for the leaders themselves. The frequency with which groups "propel" one of their members to leadership and the readiness of followers to embrace leadership indicate the existence of strong needs of followership. This is not to claim, of course, that some persons have a need to follow *per se*, though this could also be true. The notion of primitive dominance which has been frequently evoked to explain the will to lead has as its corollary a notion of submissiveness as a basic need in those who follow. There are in many of us strong dependency needs. But here it is our argument only that there must be satisfactions in followership which provide a great part of the energy of leader-follower dynamics.

Assistance in problem solution. It is a basic postulate of leadership that the successful leader is one who can help group members solve their group problems and achieve their goals. The more the leader helps other members achieve their goals, the more

readily will those members follow the leader's suggestions and express satisfaction with his conduct. Pelz's (1951) research found this principle to hold even in a hierarchical organization. There, the valued supervisors were those whose organization positions enabled them to contribute most to the goal achievement of their men. The employees gained satisfaction from the helpful behavior of their supervisors.

There are implications from other studies, too, that needs for assistance in problem solution are an important part of the psychodynamics of the leader-follower relation. This "instrumental" perception of the leader appears in Jennings' (1950) analysis. Her "overchosen" subjects were persons who were recognized by other personalities in the group as gifted intellectually and emotionally to aid them to cope with their individual needs and problems. It appeared again, as we have seen, in Bales's (1953) studies.

Generalization of these findings gains support from surveys of the attitudes of enlisted men in World War II. In evaluating leadership qualities of their noncoms, 49 percent of these men listed as most important "ability to help and advise the men under him," while another 35 percent listed first "ability to explain things clearly." This is in marked contrast to the listing of "ability to carry out orders promptly and accurately" by 87 percent of officers evaluating the same noncoms (Stouffer *et al.*, 1949). In yet another study of actual military leadership, Flanagan (1952) collected records of critical incidents; these were found to include one major area labeled "accepting responsibility for contributing to achievement of group goals." Other minor categories included such things as "set example for men by remaining calm and efficient under fire," "went ahead to check for mine fields or booby traps," "exposed self to enemy fire to rescue wounded," and so on. Whether one groups these in an area of personal bravery, as Flanagan did, or simply recognizes in them the appreciation of the men for assistance in problem solution, it is clear that the leader is again perceived as an instrument of satisfaction, and in this sense the men need their leader.

Vicarious satisfaction through identification. Followers, as complete persons, have many and strong needs other than those for assistance in problem solution. In understanding the operation of some of these other needs in the leadership relation the Freudian concept of "identification" proves useful, even though the exact connotation of this concept is not quite clear. It is Freud's hypothesis (1922) that a child early establishes a primitive "identification" with the protective adult. Apparently "identification" stands for the incorporation of the qualities of a powerful figure in one's mental system. Freud writes as if identification provides a means of incorporating the strength of another in ourselves. We can identify with strong individuals and with groups. The classic example of the vicarious strength obtained through identification is found in the small boy's assertion "My dad can whip your father." The individual feels strong if he has a close tie with another strong person. He forges this tie by becoming a follower, and thereby becoming necessary to his stronger fellow as a means of the latter's satisfaction of needs to lead. Again, the reciprocity of the satisfaction appears as a key to understanding the behavior of either element.

Because of the possibility of identification, it is in the interests of individuals to form strong groups and to create strong leadership. These things are achieved by devoted followership. Paradoxical as it may seem, followership may represent to the follower satisfactions of status needs very similar to those represented to the leader by his leadership.

Dependency needs. Psychoanalytic theorists have also stressed a view of leadership according to which the leader stands in a father relation to the led and utilizes many of the unconscious attitudes built up in the follower during childhood as part of the relation to the father. Freud saw these attitudes as basically those of dependence, and interpreted them as the continuation throughout life of early, essentially sexual, bonds with the parents. Fromm (1941) also sees this phenomenon of parental dependence as highly important in the understanding of social behavior, but he has freed it of its primarily sexual character in such a way that it now seems to transfer more rationally to such relationships as that of teacher with pupil, psychoanalyst with patient, and leader with follower. There seems to be no doubt that the great power of some leaders in special group circumstances is derived from this kind of dynamic interchange. The leader becomes the object for transference of long-established feelings of dependence and submissiveness in his followers.

While everyone is, at times, subject to such feelings of dependency and submission in relation to power figures, there is, of course, a wide variation of degree. There are many factors associated with variations in degree of dependency. Among these Freud recognized prestige of, or impression of power given by, the leader and the kind of group setting. Dependency on the leader is more pronounced in autocracy than in democracy, though there is, of course, nothing to suggest which of these is cause and which effect. Also, in times of great stress greater dependence is shown; persons tend to seek a guide and savior, and it is under such conditions that autocratic leadership flourishes. Such a theoretical analysis has been very ingeniously converted to an experimental field investigation by Mulder and Stemerding (1963), as a result of which strong support has been given to the hypothesis that in highly threatening situations individuals do feel an increased need for leadership and show a preference for *strong* leadership. In this case, however, strong leadership was not necessarily authoritarian; it was, rather, characterized, so far as experimental manipulation could achieve it, by individual prominence, social-emotional leadership acts, and task-leadership acts, all combined in the behavior of one confederate "group member."

Ambivalence of attitudes toward the leader. Whatever the culture, followers have an ambivalent attitude toward the leader. Satisfaction of dependency needs are rarely without conflict for the individual. Particularly is this true for the male adult, since in most cultures he is less free to express dependence and seems to sacrifice virility by doing so. Men, particularly, follow their leader and support him with affection, admiration, and awe, but restrict his power and impose hardships upon him by reason of their ambivalent antipathy. Almost any leader-follower relation one can think of involves this ambivalence, because the follower needs the leader and his control but does not want to be exploited. Murphy (1947) has suggested that the father "may be an object of fear in one mood; in another an object of affection. The same is true of all the father surrogates, all the grandfathers and uncles, all the policemen and martial heroes, all the kings, presidents and popes, who derive their first place in the child's experience as configural duplicates of his first experiences" (pp. 845-846). It does seem that each individual has conflicting needs for dependence and for independence which are involved in his every interaction with persons in authority. As we argued earlier, because leader-follower differentiations persist we can only conclude that the credit balance of satisfactions lies in followership and, therefore, that positive attitudes toward the leader tend to be dominant. On the other hand, this conception of ambivalence suggests the explosiveness of the leader-follower

relation. It is axiomatic that in the course of group life frustrations will occur, and it is to be expected that there will, from time to time, be hostile and aggressive outbursts against the leader. Especially is this the case when the leadership has been of a relatively coercive variety.

There is, however, another interesting effect of ambivalence toward the leader which should be mentioned here. Fromm (1941) has hypothesized that much of the fanatical strength of positive feeling for the leader is really due to the ambivalent antipathy toward him. He sees a tendency to repress the feeling of hatred and to replace it with a feeling of admiration. This serves to circumvent the antipathy; if I believe that the person who dominates me is very wonderful or perfect, then I need not be ashamed of submission to him and there is no motivation toward equality with him, since he is so strong, so wise, so very superior.

THE EMOTIONAL RELATION OF LEADER TO LED

Where persons constitute an interactive system, the essential elements with which we have to deal in understanding the relationship between them are the "known others," or the cognition of one by another. As we have seen already, the perception of personality of one by another, the knowledge of his prior behavior and especially of any of his prior acts of leading, are the primary determinants of the interaction relation. Parsons (1953), with great insight, pointed out that in such circumstances the other is both a person and a relation in the structure of the interactive system. To borrow his example, if one says that John is his friend, John is characterized both as a person and as a participant in a system of social interaction in which the informant is also involved. Elaborating this notion, Parsons says (p. 16):

It may first be pointed out that two interacting persons must be conceived to be objects to each other in *two primary* respects, and in a third respect which is, in a sense, derived from the first two. These are (1) cognitive perception and conceptualization, the answer to the question, *what the object is*, and (2) cathexis-attachment or aversion—the answer to the question of *what the object means* in an emotional sense. The third mode by which a person orients himself to an object is by evaluation—the integration of cognitive and cathectic meanings of the object to form a system, including the stability of such a system over time.

If this analysis is applied to the concept of leadership, it is seen to be immediately relevant and useful. The leadership relation is evaluational. The cognitive component of the evaluation is, as we have seen, the judgment, by other group members in the situation at the time, that the leader's skills and resources do make a positive contribution to group advance or, in other words, that he may be instrumental in increasing member satisfactions. This judgment confers on him power and status in the eyes of the member-judge, and where the judgment is shared by many both from within and without the group he will be identifiable as a person of power and prestige. Such cognitive evaluation has been much observed and has, for the most part, been the basis of what has so far been said in this chapter.

The cathectic or emotional component of interpersonal evaluation has, however, been very much neglected. Redl (1942) gave a very interesting lead in this direction which has, however, received comparatively little attention. Gibb (1958) attempted some elaboration, which may be summarized as follows. Assuming, as a

starting point, that two basic emotional qualities, affection and fear, characterize relations to leaders and that each may be involved in independently varying degree, it was suggested that four common forms of authority and influence were readily analyzable. It must, of course, also be understood that, while relations to any others may be described in these two dimensions, relations to leaders all occur in the upper portion of a third dimension determined by the cognitive evaluation mentioned above. Thus, to discuss leadership, each of the relations needs to be prefaced with the condition: when the cognitive component of the interaction involves the recognition of higher or instrumental status, then (1) where the degrees of fear and affection are both high, the condition of *patriarchy* exists; (2) where fear is high and affection minimal, the relation is that of *tyranny*; (3) where affection exists in high degree and fear is minimal, the term "*ideal leadership*" or "charismatic leadership" is frequently used; and, finally, (4) where both fear and affection are minimal, the relationship lacks flavor and is characterized as *organizational* or instrumental. Further, it was suggested that the emotional toning which differentiates among these leadership styles manifests itself significantly only when the relationship persists over a period of time, though it is to be expected that more sensitive techniques than those now available might well admit of their detection even in short-term laboratory group situations. This formulation did lead Gibb to the hypothesis, based on unsystematic observation of groups and still undemonstrated, that in groups, in our culture at least, where there is an expectation of stable structure, there is a tendency for the quality of the relationships to move in the direction of increasing fear and decreasing affection, though not in equal proportions. Simultaneously, there is likely to be some movement along the cognitive dimensions also, insofar as the rigidity of the structure holds in a position of influence a person whose contribution to later tasks may not be so great as his contribution to those in which he assumed the influential role. If we borrow a technique from Fiedler and represent these dimensional notions in a block design as in Fig. 2, it may be said that with time the quality of the relation

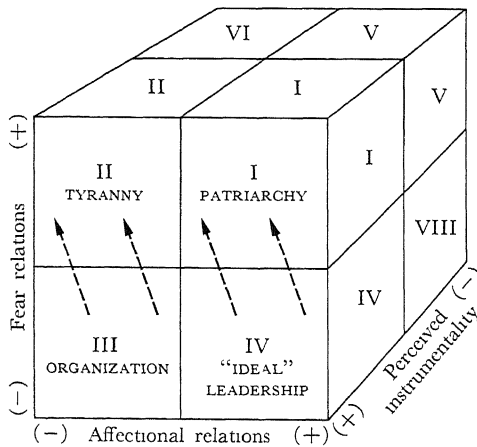


Fig. 2. A dimensional representation of the emotional and cognitive components of leader evaluation.

will tend to move as the dashed arrows indicate, but that there will be a tendency also for a movement in the direction of blocks V, VI, VII, and VIII, that is, toward less consensual perception of contributory strength in problem solution.

It was also pointed out by Gibb (1958) that there are presumptive relations of some significance between the two components of evaluation-in-interaction and Cattell's (1948) differentiation between effective and maintenance functions in the group. The evidence suggests that the cognitive component, or perception of instrumentality, is more heavily weighted in the determination of leadership when the ratio of effective to maintenance synergy is higher, that is, when the group is more concerned with task accomplishment than it is with its own internal problems. Conversely, the cathectic component of evaluation achieves greater prominence when this ratio is lower, or when the group is preoccupied with its own internal problems. It has been repeatedly observed (for example, Gibb, 1949a; Hemphill, 1961) that acts of leading occur most frequently when groups are faced with a problem or when manifold decisions must be made. Conversely, in therapy groups where there are not, as a rule, any clear-cut problems or decisions to be made, the emotional relationships of members to one another, and of the members to the therapist, become highly important to all members. The familiar phenomenon of transference in the clinical relation of therapist and patient is probably a manifestation of the same fact in the dyad.

Delegated leadership or headship Dynamic elements similar to those just discussed may characterize relations between heads and subordinates, but other more subtle relations are also involved. In this case, loyalty is directed primarily toward the institution, of which the head is a delegate varying from a puppet or a mere symbolic representative to an efficient executive. The subordinates depend on the institution and its fixed machinery, rather than on the head, to discover and express and satisfy their needs. This relation is typically represented by the executive in a big modern business corporation. He cannot compare with his employees in the performance of any one of their several tasks. He is not one of the group and it is not oriented primarily toward him. In fact, the group will generally have a "natural" leader of its own choosing, and the executive is in danger of directing a formed society from without. That he can do this, however, suggests some substance to the relation. When we examine the motives in such a group, we find that such a "leadership" relation is possible only because the group is part of a larger economic and political organization which the member already accepts on other grounds. The executive is accepted as a delegate of a power already bound to the individual's motivations.

Comradely "rapport." This term was suggested by Cattell to name a kind of influence relationship about which little is yet known. Whitehead (1936), in studying the output fluctuations of a small group of workers over four years, observed that, unknown to the workers, there were distinct correlations of fluctuation curves between certain workers. These might have been due to common environmental causes, but the fact that the correlation was far greater between two individuals having obvious psychological "rapport" is against such a view. In fact, Whitehead observed that, while "mutual sentiments of approval" resulted in positive correlations, it was also true that personal antagonism produced negative correlations, and zero correlations were associated with mutual indifference. There was a tendency for one individual, however, to set the rate of fluctuations for most of the group.

Here we are, perhaps, dealing with an emotional and behavioral contagion in the sense that Polansky, Lippitt, and Redl (1950) later used this term. For them, contagion was a social-influence phenomenon in which the initiator does not openly communicate any intention to influence. It may well be that "contagion" is a highly important embryonic form of leadership, the study of which may reveal a great deal about the emotional relation of leader to led. We are dealing here with a type of relation which occurs in many associations of a sociable, friendly kind and which has been frequently studied as leadership by, for example, Jennings, but which would better be called friendship and popularity influence, unconscious and unstructured, or simply *contagion*.

THE EFFECTS OF LEADERSHIP

In this section, the title of which has been borrowed from Selvin (1960), we intend to discuss not only his work but a diverse set of studies all of which have concerned themselves with the effects of leadership in different styles upon group functioning. While leaders may be classified or "typed" according to a number of principles, by far the most common form of classification has been in terms of leadership style or manner of exerting influence. That this has not been an invariable practice, however, is indicated by the Ohio State University studies, previously mentioned, in which Halpin (1957) showed that superior performance and high morale among air crews were associated with the airplane commander's having high scores on both consideration and initiation of structure. Style studies have achieved results which are consistent with this.

Among the earliest studies of leadership style was that of Lippitt and White (1943), which defined styles as "autocratic," "democratic," and "laissez-faire." Apart from the latter, about which there is considerable doubt, these terms have continued to be most commonly employed to designate opposing poles of a style continuum.

AUTHORITARIAN LEADERSHIP

The basic psychological meaning of this distinction has nowhere been spelled out. Authoritarian leadership depends largely on the dynamics of the drive rewards which have been described under the headings of primitive dominance, vicarious satisfaction, dependency needs, and the like. Nevertheless, it would be a mistake to assume that the autocrat controls the group ultimately only by the threat of physical force, denying any satisfaction to group needs other than those created by fear. Obviously, one man cannot do this. He must satisfy and reward the group's psychological needs much as does the democratic leader. He must control psychologically. But as Cattell, in a personal communication, has pointed out, "we may notice two important differences in the psychological accounts: (1) the autocratic leader creates needs, for example, by bringing to the group fear, insecurity, and frustration by which they were not originally stimulated; and (2) he exploits regressive, primitive, unconscious needs instead of helping the group to outgrow them, for example, father dependence, vicarious satisfaction through identification, superego projection in place of individual conscience."

The authoritarian leader, and still more the authoritarian head, must himself remain the focus of group attention. He will need to emphasize obedience, again

focused particularly on himself. Krech, Crutchfield, and Ballachey (1962) have expressed this need of the authoritarian leader by saying that he must maintain segregation within the group and must see that intragroup communication is kept to a minimum except insofar as it is through him and focused upon him. In this way, he renders himself the key to all group action and eventually becomes indispensable. For the group this has two disadvantages: (1) withdrawal of the leader may precipitate chaos and even possible dissolution; (2) reduced opportunity for interpersonal communication within the group reduces the morale of the group so that it will be less able to withstand attack and strain.

DEMOCRATIC LEADERSHIP

Democratic leadership is, in most respects, the direct antithesis of the authoritarian pattern. It is associated mainly with relationships in which there are shared satisfactions and a mutual respect of leader and led for one another. Even with apparently adequate reward, men object to being used as the means to another's ends, because the loss of personal autonomy is itself the frustration of a basic need. The democratic leader has the complex problem of giving each individual satisfaction as an individual, protecting the group as a whole, and satisfying his own aspirations or benevolent intentions. He does not necessarily differ from the authoritarian leader in the amount or extent of his power, but he has a different role or pattern of roles in the group structure (Krech, Crutchfield, and Ballachey, 1962, p. 435):

The democratic leader seeks to evoke maximum involvement and the participation of every member in the group activities and in the determination of objectives. He seeks to spread responsibility rather than to concentrate it. He seeks to encourage and reinforce interpersonal contacts and relations throughout the group structure so as to strengthen it. He seeks to reduce intragroup tension and conflict. He seeks to avoid hierarchical group structure in which special privilege and status differentials predominate.

The Iowa studies were able, by virtue of a well-balanced design, to attribute effects to leadership behavior or style as follows: Authoritarian as compared with democratic leadership produced (1) a greater quantity of work, but (2) less work motivation and (3) less originality in work; (4) a greater amount of aggressiveness expressed both toward the leader and other group members; (5) more suppressed discontent; (6) more dependent and submissive behavior; (7) less friendliness in the group; and (8) less "group-mindedness."

A somewhat different distinction among leadership styles, though not unrelated to the authoritarian-democratic continuum, was made by Preston and Heintz (1949). They instructed elected leaders to behave either as "participatory," taking an active part in the process of group decision making and encouraging contributions from all members, or as "supervisory," seeing that the work was done with reasonable expedition. In this work it was found that participatory leadership was more likely to be associated with group consensus and with satisfaction with the consensus.

The University of Michigan Institute for Social Research has since 1947 conducted a number of studies in industrial settings to explore relationships between principles and styles of leadership or supervision and work performance. One of the major findings of this research has been that "employee-centered" supervisors are

higher producers than "job-centered" supervisors (Likert, 1961). Taken together with a variety of other findings of this research, such as that higher production supervisors tried to create a more "supportive personal relationship" between themselves and the members of their work groups and that they took a greater interest in their subordinates, it can be said that these findings clearly confirm the findings and conclusions of both the Iowa and Ohio State researches. Productive and satisfying work conditions are most likely to result from leader behavior that is high in both consideration and initiation of structure. And as Selvin (1960) suggests, this combination is more likely to characterize the democratic rather than the authoritarian leadership style.

It is of considerable significance for an understanding of the effects of leadership that Likert (1961) has reported that "interaction and stimulation from supervisors and peers was necessary to achieve high performance." While there is evidence that freedom to do one's work at one's own pace and in one's own way does contribute to high performance, it is abundantly clear that this effect is contingent upon the individual's being a part of an active social system in which there is interaction among members and contact with leadership. Likert (1961) suggests that "this interaction motivates the individual. He knows and accepts what is expected of him and often takes a major role in setting the goal himself."

It has been another important finding of the Michigan studies over the years that the style of supervision exercised by first-line supervisors tends to reflect the style of supervision to which they, in turn, are subjected. There are thus very real reasons for thinking, as Selvin (1960) proposed, not of the behavior of a leader but of the leadership climate of a group.

Starting from empirical data provided by the perceptions by Army trainees of their leaders, Selvin (1960) developed a three-dimensional structure of perceived leadership from which, in turn, he derived four types of leadership climate. These were (1) *paternal*, in which the leaders were respected, feared, and scorned; (2) *persuasive*, in which the trainees had confidence in their leaders who, in turn, gave the men strong support; (3) *arbitrary*, in which the leaders were perceived as aloof, primitive, inconsistent, and untrustworthy and undeserving of confidence; and (4) *weak*, in which there was no respect for, no inspiration from, and no fear of, the leaders. Since Selvin's data provided only one example of paternal leadership, he concentrated on the other three, which he equated to democratic, autocratic, and laissez-faire atmospheres, respectively. A number of findings from this study are of very considerable interest, though, as Selvin himself recognizes, they require replication in other kinds of situations and, perhaps, in other cultural or subcultural settings. First, it was found that in each climate leaders in more direct command exercised greater influence than officers with more administrative duties, as might well have been expected. More to the point of our current interest is the finding that commanding officers exercised more influence and created greater feeling of confidence in the persuasive than in the other climates. Second, looking at the behavior of individual members it was found that arbitrary (authoritarian) leadership produced relatively high levels of nonduty activity such as going AWOL, eating between meals, drunkenness, seeing the chaplain, blowing one's top, fighting, and engaging in sexual intercourse. The persuasive leadership groups had low rates in these activities. The weak (laissez-faire) climate had rates of nonduty activity generally intermediate between the other two but of such a nature that a strong suspicion, engendered by

the Iowa studies, becomes a reality: namely, that weak leadership in circumstances where appointments to office have been made, and where there are positive expectations of officeholders, is very frustrating. Selvin concluded that arbitrary leadership generated great stress and that this was released in nonduty behavior such as higher rates of sexual intercourse "not necessarily with the men's wives or steady girl friends," and this despite the fact that by its very nature arbitrary leadership afforded less opportunity for sexual contact.

When Selvin extended his considerations to include available knowledge of the individual differences among members of his groups, he found that "the effects of leadership bear unequally on different kinds of men," and he suggested that "the explanation of these patterns of differential impact and differential sensitivity obviously requires a more elaborate theory than has typically been used in research on leadership."

Finally, if any simple summary of these researches is to be offered at all, the best is probably that offered by Shaw (1964) of his own investigation of authoritarian and nonauthoritarian types of leadership in various communication nets: namely, that authoritarian leadership (in agreement with the early Iowa studies) "produces greater work output and lower morale than does non-authoritarian leadership. The question of quality of the work as a function of type of leadership is [however] still unsolved."

Leadership is a means, rather than an end in itself. Leadership technique must, therefore, be evaluated in relation to the goal of group behavior or in relation to group values. Since there is a great variety of goals in any group at any time, there are many ways to evaluate leadership technique. In some respects the democratic technique has decided advantages, but it does have limitations; and there are circumstances and goals which seem to give advantages to authoritarianism. Whatever the group goal, however, the effectiveness of any leadership technique lies in its acceptability to the followers, and whether authoritarian or democratic techniques are more efficient frequently depends on the expectations of the followers, as many studies have now shown. Lippitt and White (1943), in their early study, observed that individuals differed in their response to and satisfaction with these different techniques, and that authoritarian methods were less effective with groups which had experienced the democratic techniques. Sanford's (1950) study seems conclusive in this respect. Authoritarian personalities preferred status-laden leadership, accepted strongly directive leadership, and regarded the authoritarian leader as "better" than his more democratic counterpart. In fact, they tended to express open hostility toward a leader as soon as he revealed any signs of "weakness." Equalitarian personalities, on the other hand, accepted authoritarian leadership only as the circumstances demanded it.

Among the principal reasons frequently offered (*cf.* Haيمان, 1950) for the superiority of democratic leadership where it occurs is that this leadership style more than any other encourages *participation* on the part of all group members. As Haيمان suggested, it is a common finding in social-science research and in education that people understand best those things they have actually experienced and are influenced most by processes in which they have participated. Closely allied to this greater use of participation is the fact that *group decisions* which have been arrived at interactively elicit more solid support and issue into action more frequently than do those which are handed down authoritatively. Many studies in industry and elsewhere (Bennett, 1955; Coch and French, 1948; Lewin, 1947) have confirmed the effective-

ness of group decision. It is a powerful device for attitude and behavior change which is available to the democratic leader and part of his technique, but which could rarely, if ever, be employed by the authoritarian. Further, because it shares decision making and responsibilities, democratic leadership enables a group to make maximum use of the relevant individual differences existing within it, as Haiman (1950) said. It *releases creativity* in group members because it can tolerate temporary or specific transfer of power and influence in a way that authoritarianism cannot. The authoritarian leader seeks to retain power by monopolizing knowledge and decision making, whereas the democratic leader gains strength by utilizing the full capacity of the group. However, groups are not always more efficient than individuals, as much research has now demonstrated (Dashiell, 1935; McCurdy and Lambert, 1952; Moore and Anderson, 1954; Shaw, 1932; Taylor and Faust, 1952). Dashiell's (1935) experiment, particularly, showed that jury reports, after discussion, were less complete than those of individual witnesses or jurors but that they were more accurate. The release of creativity may not, in all circumstances, represent efficiency. On the other hand, to the extent that participation and expression of creative ideas are themselves valued and enjoyed, the democratic style has a built-in insurance of satisfaction and high morale.

The *cohesiveness* or viscosity of a group is found to be generally higher under conditions of democratic leadership. The Lippitt experiment previously mentioned found that, under democratic control, children formed a stronger, more durable group which suffered much less disruption of activity in the absence of the adult leader than under other forms of control. Although the dynamics of the leader-follower relation already described also point to this greater stability and cohesiveness of the democratically led group, this is a finding which demands limitation and qualification. Cohesiveness and high morale are largely the result of having one's expectations fulfilled. We have already seen the importance of this concept, and it has been shown that democratic or permissive leadership can frustrate and make an autocratically oriented group unhappy, just as authoritarian control can demoralize a democratically oriented group. One of Scott's (1952) findings seemed to confirm this suggestion. Among naval ship's crews, morale was highest in those units where leadership was less permissive and where leaders insisted on relatively formal relationships between superior and subordinate. Additional research and analysis are needed to determine the types of group situations in which each kind of leadership is effective. Haythorn (1956b), however, did show that when leaders and followers had similar *F*-scale scores (that is, when authoritarian leaders were in groups whose members had high average authoritarianism and vice versa), the members were more satisfied.

It is common in our culture at the present time to place negative values on authoritarian leadership. Much of this attitude seems to be due to a prolonged period of ideological opposition to cultures authoritarily organized, and a false assumption of identity between an authoritarian leadership style and authoritarian political systems. Studies of groups in action reveal that in certain circumstances authoritarian leadership is highly valued. There is in the American culture an ambivalence about leadership technique, and morale is sometimes higher and satisfactions maximized when more authoritarian techniques are employed. The nature of the group task is an important determinant of the leadership technique which emerges in that group. In general, it can be said that emerging leadership in temporary groups is

more democratic, more permissive, and less dominant (1) when the situation is one in which no member can feel himself more competent than others, (2) when appropriate techniques of communication are not known or not well understood, and (3) when the situation arouses strong attitudes regarding the private rights of all group members. Conversely, emergent leadership is more authoritarian, more dictatorial, and more restrictive when (1) speed and efficiency are emphasized to the point of outweighing the formalities, and (2) when the novelty of the situation for each member precludes his ego-involvement with particular procedures, so that he does not interpret direction as being in any way critical of his ability. If the group is faced with a need for emergency action, then that leader behavior is most effective which is prompt and decisive and which is perceived by the members as likely to remove quickly the threats in the situation. Authoritarian leadership is practically demanded under such circumstances.

Stimulated by the widely recognized facts that one style of leadership was associated with effective group performance in one set of circumstances but not in others, and that there were circumstances in which a quite contrary style seemed most effective, Fiedler embarked upon a series of researches which have had considerable interest and which now make a very substantial contribution to both the empirical study and theory of leadership. These studies, which have been summarized and integrated by their senior author (Fiedler, 1964), reviewed the circumstances under which considerate or democratic leader behavior appeared to promote high morale and productivity alongside those in which productive efficiency, if not morale, was seen to be associated with task-oriented, instrumental, or authoritarian leadership. Such a review suggested "that the prediction of group performance on the basis of leader attributes (styles) is contingent upon the specific, situational context in which the leader operates" (Fiedler, 1964, p. 154).

Because it was thought that the leaders' perceptions of their coworkers "would reflect important task-relevant attitudes, and that these would materially influence group interaction and performance" (Fiedler, 1964, p. 153), two person-perceptual variables were used for predicting leadership effectiveness. These were the "assumed similarity of opposites" (ASo) and the "esteem for the least preferred co-workers" (LPC). Since the correlations between these measures were found to be from 0.70 to 0.93, however, no differentiation between them is now made. While these were regarded as personality variables, they achieve their primary significance for the present discussion through the research finding of Hawkins, reported by Fiedler, that each can be shown to be characteristic of the variables of "initiation of structure" and "consideration." "Individuals who differentiate sharply between their most and least preferred co-workers (low ASo) tend to be more oriented toward the task . . . and to be more punitive" (Fiedler, 1964, p. 155). A person who sees even a poor coworker in a relatively favorable manner (high ASo) is likely to behave in a way which shows consideration for others and promotes member satisfaction; he is also likely to be less directive.

Fiedler (1955) found that the leaders' ASo scores and the performance of Army and Air Force crews were negatively associated for crews in which the leader "chose" (in the sociometric sense) his key man (for example, the gunner on a tank-gunnery task), and were positively associated when the key man was sociometrically rejected. It was thus suggested that the relation between leader style and group effectiveness was *contingent* upon the sociometric structure—in this case, in such a way that author-

itarian leadership was associated with effectiveness when leader and key man were compatible, but democratic leadership was more appropriate when this was not the case. Later, Fiedler reported as follows (1965, p. 539):

ASo scores correlated highly with group performance in a wide variety of studies, although not consistently in the same direction. For example, the sociometrically chosen leader's ASo score correlated $-.69$ and $-.58$ with the percentage of games won by high school basketball teams and $-.51$ with the accuracy of surveying of civil engineer teams (Fiedler, 1954), and the melter foreman's ASo score correlated $-.52$ with tonnage output of open-hearth shops (Cleven and Fiedler, 1956). These negative correlations indicated that low ASo scores were associated with good group performance, i.e., that these groups performed better under managing, directive leaders than under more permissive, accepting leaders. However, while the ASo score of the sociometrically accepted company managers also correlated negatively ($-.70$) with the net income of consumer co-operatives, the board chairman's ASo score under the same circumstances correlated $+.62$ (Godfrey, Fiedler, and Hall, 1959). Thus groups with different tasks seemed to require different leader attitudes. In a more recent study of group creativity in Holland, the leader's LPC (ASo) score correlated with performance $+.75$ in religiously homogeneous groups with formally appointed leaders, but $-.72$ in religiously heterogeneous groups; and while the correlation was $+.75$ in homogeneous groups with appointed leaders it was $-.64$ in homogeneous groups having emergent (sociometrically nominated) leaders (Fiedler, Meuwese, and Oonk, 1961).

From such evidence that the effectiveness of leadership is clearly dependent on the structure of the group-task situation in which it occurs, Fiedler has been led to construct a categorization of group-task situations in terms of three dimensions: (1) *affective leader-member relations*, reflecting the extent to which the leader is liked by and has the confidence of his members; (2) *task structure*—the extent to which the task has ambiguity as opposed to clarity of structure, in the sense that it could be clearly programmed; and (3) *position power*, by which is meant the extent to which the leader may dispense rewards, punishments, or sanctions, generally by virtue of authority given him by the organization within which the group operates, by tradition, or by any other formally recognized institution.

On the basis of this three-dimensional scheme, Fiedler (1964, 1965) has derived eight descriptively different group-task situations and has ordered these in terms of favorableness of the situation for leadership. The results from many studies are then applied to indicate the relationship between leadership style and the favorableness for leadership of the situation. The pattern revealed is that authoritarian, managing, directive leadership characterizes *effective* groups under both very favorable and very unfavorable conditions for leadership. When the leadership has power, good leader-member relations, and a clearly structured task, and also when it lacks power, does not enjoy the confidence of members, and the group task is ambiguous—in both of these circumstances, authoritarian leadership proves most effective. It is in the moderately favorable conditions where the group faces an unstructured or ambiguous task or where the leader's relations with group members are tenuous that democratic, considerate leadership is most effective.

It will be readily perceived that this relationship has great practical significance to those who deal with the selection and training of leaders. If one's leaning is toward personality as a determinant of behavior, it will be concluded that those who are predisposed to exercise an authoritarian leadership style will be most satisfactorily placed in situations which are either markedly favorable or markedly unfavorable to leadership. Those who are predisposed to a democratic, considerate, human-relations or group-oriented leadership style, however, will be best served by conditions of intermediate favorableness. On the other hand, those who aver that behavior may be modified to suit the requirements of the situation will recognize the tremendous weight imposed upon leaders to diagnose group-task situations accurately, including, of course, their own affective status, so that the appropriate directive or permissive style may be selected.

THE PHENOMENA OF SUCCESSION

In nearly all groups one leader follows another. Even within traditionless, laboratory groups, leadership emerges early and what one observes primarily are changes of leadership, whether this be simply a modification of behavior or a real turnover in personnel. It follows, then, that an important part of the situation for any newly succedent leader derives from the behavior of his predecessor. It is not that behavior, as such, with which the successor is concerned, but it will have had consequences which are now reflected in the expectations of the members, in the structure of their interpersonal relations, in their morale, and in other syntality dimensions. With these the new leader is concerned, and he must adapt his behavior to them. Some attention has been given this problem by sociologists (for example, Gouldner, 1950), but no well-developed theory of succession yet exists.

Attempts to explore factors determining the *emergence* of leadership in groups have been singularly unsuccessful. Polansky, Lippitt, and Redl (1950), who studied behavioral contagion in camp groups, reported that those individuals were more likely to exercise influence who felt secure in the group, who had opportunities for communication, and whose actions were consistent with the needs of group members. But just what it was that conferred these advantages on one member rather than another was not revealed. A later report (Lippitt, Polansky, and Rosen, 1952) suggested that attributed power choices were highly related to child judgments of physical prowess and personal liking. This conclusion is reminiscent of Gibb's finding (1950) that something of the value one individual had in the eyes of another, which partially determined his leadership status, was already evident at the stage of a first impression. Emergence as leader cannot yet be fully explained by personality attributes, or by abilities, or by ratios of these to the needs of the group, though all of these are significant. The final determiners of the rise to leadership remain somewhat of a mystery.

MODE OF SUCCESSION

Concern with this kind of problem has focused attention on the mode of succession to leadership as a source of explanation for some of the empirical findings. There is a wide variety of such modes, and these help to explain some of the characteristics of leaders and some of the variations in leader behavior. One route by which leaders succeed to power is that of heredity. To the extent that ability and personality

traits are hereditarily determined, leaders or headmen by this route are likely to resemble their predecessors and, as a group, may even show characteristics which differentiate them from followers or subordinates. Yet these differential attributes may be in no meaningful way associated with leadership skill or technique. The most outstanding example of this fact which comes readily to mind is the hemophilia of one of Europe's more important royal lines.

The two most frequent and important modes of accession to positions of authority are, however, group recognition or election and executive appointment. Carter (1953) found quite surprising differences in the behavior of leaders of laboratory groups, depending on which of these forms of sponsorship was employed. It appeared that in the appointed condition the leader perceived his role as that of a coordinator of activity or as that of an agent through which the group could accomplish its goal. Where the leader was permitted to emerge with group sponsorship, he took over by energetic action. In other words, the behavior of the group-sponsored leader was more "authoritarian" than that of the appointed leader. According to Carter (1953), Beatrice Shriver followed up the implications of this study to investigate the effect of increasing the formality and power of the appointed leader. She found that one could be given too much power and that under its weight all leader behavior tended to disappear. As we have seen, Cattell and Stice (1954) found that, if leaders in experimental groups were differentiated according to the mode of their accession to leadership, they revealed different patterns of personality traits; for example, while problem solvers were more intelligent, elected leaders were more extraverted.

While this situation in the experimental group may seem complex enough, much greater complexity confronts the sociologist who would study succession and sponsorship in organizations which already have a long history and a tradition behind them. Thorndike (1940) identified four principal processes by which persons in authority are sponsored: (1) by majorities, (2) by co-option by a governing class, (3) by blocs, (4) by trustees for the public. Kornhauser (1952) has pointed to the fact that even "the color of a man's skin may lead to his sponsorship for or exclusion from a job. Therefore it is a career contingency for him. The color of a man's skin may have power or status or other functions for an organization or looser work group. Therefore, it is a control contingency for those in power" (p. 452).

It can, of course, be said that our formula—that the leader will be a person who contributes maximally to the solution of group problems—still holds here. The point we are trying to stress, in this formula, is that the "group problems" are those of the sponsoring group, and that meaningful explanation demands the identification of that group and probably requires some description of its relations with other groups, particularly other groups which will come under the influence of the leader thus sponsored.

This is never more clear than when we consider the case of headship, where the sponsoring group is superior management or a governing class. In this case, the mode of succession may be called executive appointment or co-option, depending on the degree to which the new appointee is absorbed into the already existing leadership or is left relatively independent, merely gaining support from the backing of a management clique. This power of incumbent leaders to determine their own succession and to influence future leadership cannot be overlooked. Commonly they compel the group to select their own kind. At the very least, it must certainly be true that, where

-succession to leadership is determined by appointment from above, the persons so chosen are perceived to meet the needs of the superior sponsoring group and to owe their primary obligations to higher echelons of control. They may or may not be able to function as instruments of satisfaction for their subordinates. Finally, it is in these circumstances that the obligations of the leader to his predecessor stand out most clearly.

Probably the most common way in which a newly succeeded leader must meet obligations to this predecessor is through his obligations to the norms and institutional rules of the group. This is a feature of the leader-group relation without which no leadership phenomena can be really understood. To succeed to leadership at all, an individual must first be established as a member of the group. This he is more likely to be if he shares the group norms. Frequent comment was made about the difficulty replacement officers had in establishing themselves in combat units. Here, of course, there is a militarily prescribed "distance" between the "leader" and his men, and this is emphasized by outward symbols of rank. But far more important is the less frequently mentioned fact that these newcomers were not perceived as sharing the norms of the group. Many times, they had not yet been in combat and could not have an understanding of the unofficial rules which had grown out of that experience. For this reason, it was often observed that in combat units, after officers and men had shared the common experiences of deprivation and fear, the attitudes of the men toward their officer were more genuinely those of follower toward leader. "Distance" had been reduced, though the symbols remained.

THEORIES OF LEADERSHIP

We have examined at least three possible theories of leadership. One looks upon leadership as a *unitary trait* that characterizes leaders wherever they may be found. It is necessary for this theory that all kinds of leaders in all kinds of situations and cultures reveal this trait, and that only leaders should do so. Clearly, no such unitary trait has been found. Different cultures are known to produce different types of leaders. Within a single culture an individual may lead in a particular situation because of his intelligence, special knowledge, special skills, special abilities, or personality traits. No contemporary scientific champion of this theory can be found, though some laymen still accept it.

True, as we have seen, there are certain traits quite commonly found in leaders, particularly if the kind of leadership studied is limited in some way. It may be that eventually some such basic core of personal qualifications for leadership will be identified, but present indications are that leadership is not truly unitary, that it is unlikely that any common trait is always present to account for leadership in all spheres.

(A modification of the unitary-trait theory may be called the *constellation-of-traits theory*. According to this theory, in each leader there can be recognized a pattern of traits which constitutes his leadership capacity. In this case, the pattern may be conceived to vary from the leader in one situation to the leader in another. But this theory is like the former in that the why of leadership is to be found in the personality of leaders. It usually concludes that there is a basic personality pattern for leaders. The elements of this pattern are usually said to be those same traits

that the unitary trait theory regards as characteristic of leadership. The constellation theory merely claims a less invariant organization of those elements. Among the arguments advanced in favor of this theory are the following: (1) some individuals have every environmental opportunity to lead, but fail to do so; and (2) most leaders do not wait to be propelled to leadership; they aggressively seek out positions of authority and power. On the other hand, it has been pointed out: (1) not all persons who appear to possess the necessary constellation of traits do become leaders; (2) the leader can only follow social trends or, at most, modify them but slightly—he may equally well be viewed as the product of social forces and as the determiner of them; and (3) a leader in one situation is not necessarily a leader in other situations.

A third point of view may be referred to as the *interaction theory*. Any comprehensive theory of leadership must incorporate and integrate all the major variables which are now known to be involved, namely, (1) the personality of the leader, (2) the followers, with their attitudes, needs, and problems, (3) the group itself, as regards both (a) structure of interpersonal relations and (b) syntality characteristics, (4) the situations as determined by physical setting, nature of task, etc. Furthermore, any satisfactory theory must recognize that it is not these variables *per se* that enter into the leadership relation, but rather the perception of the leader by himself and by others, the leader's perception of those others, and the shared perception by leader and others of the group and the situation. No doubt Sanford (1952) was right when he predicted that studies focusing on any one of these aspects alone will continue to yield "positive but unexciting correlations." What is needed is a conception in which the complex interactions of these factors can be incorporated.

INTERACTION THEORY

(Leadership is an interactional phenomenon arising when group formation takes place. The emergence of a group structure, whereby each of its members is assigned a relative position within the group, depending on the nature of his interactional relations with all other members, is a general phenomenon and a function of the interaction of individuals engaged in the pursuit of a common goal. But the *relative* role an individual member assumes within the group is determined both by the role needs of the group and by the particular attributes of personality, ability, and skill which differentiate him from other members of the group. However (and this is the crux of the interactional theory), "the role he achieves is determined not by his personal qualities in the abstract but by his standing in relation to his fellow members in the *special qualities* required by the particular group goal or situation" (Sherif, 1948, p. 456). His standing, in turn, is dependent not upon possession of these special qualities as such, but upon the extent to which his fellows *perceive* him as having these qualities. Leadership is a function of personality, and of the social situation, and of these two in interaction.

Such an interactional conception of leadership is not of recent origin. One of the earliest experimental studies of leadership (Terman, 1904) assumed something of the pattern which is now widely accepted. Attempts at leader selection during World War II reawakened interest in this theory by revealing that selection on the basis of personality was hopelessly inadequate. With a return to miniature or quasi-real-life situation testing, many of the features of leadership recorded in this chapter appeared clearly. Krout (1942) reported a case which illustrates well the interactional

nature of the leader-follower relation. In this country in the 1920's, an engineer developed a cult and following hardly equaled among modern religious leaders. Calling himself "The Great I Am" and claiming to have learned the "secrets of ascended beings," this man marshaled thousands into abject worship. There can be little doubt that this man was insane. Yet he became a very considerable leader of a sizable group of people—presumably sane. (It is clear that it was not any objective evaluation of his personality that was important. What was important was the way other persons perceived this individual's claims and the meaning they gave to them in the light of their own personalities, their own needs and attitudes.) No doubt other persons have made similar claims and have met with derision only. One becomes a leader, while others are characterized as mad—the essential difference is not in the stimulus individuals alone, but rather in the attitudes, beliefs, and set of the stimulated persons, which determine the latter's response to the stimulus.

Another fact of leadership which an interactional theory is best equipped to deal with concerns the effect a leader can have on the dynamics of the group. This is much smaller than has generally been thought. There are times, when an organized group is moving at a relatively slow pace, at which a leader can have considerable effect on it provided he remains within the framework of the general group goals. On the other hand, when a group is highly polarized, a leader may be powerless to divert its attention from its immediate object. The old story of the French Revolutionary leader who saw the mob surge by and said to his friend, "I am their leader, I must follow them," illustrates this relation well. It is one function of a leader to embody and to give expression to the needs and wishes of the group, and to contribute positively to the satisfaction of those needs. To the extent that he does this he may remain the leader; when he fails to perform this function he tends to be superseded—and he fails as soon as the followers perceive his needs and his goal to be divergent from their own.

However, this relation is no more absolute than are other observed relationships reported in this chapter. It holds true only in a general sense and is contingent upon other events and processes, as Hollander (1958) has demonstrated. Hollander pointed out that there is an awkward contradiction in the fact that group leaders are somehow responsible for change and progress, while at the same time rather more bound to conformity with group norms than are members outside the leadership. It is not, of course, asserted that change is only initiated by leaders, though to some extent leaders need to be associated with it. In recent years, the role of stabilized deviancy has been recognized as serving an important change or innovation function; it has been suggested that most groups develop stabilized deviancy just as they develop leadership, and that a rewards-costs analysis of this role can be offered in terms very similar to those for leadership. However, there is a clear need to recognize that individuals who have achieved leadership status are thus in many ways differently perceived from others. As Hollander (1958) said, "At bottom, status may be taken to be an outcome of the group's differentiated perception of the individual, leading to a set of particularized expectancies regarding his behavior. This occurs as a function of certain of the behaviors or characteristics evidenced by the individual in interaction, which then yield a reconstruction of the group's perception of him" (p. 120). It is Hollander's suggestion that each group member may be thought to have group-awarded credits permitting him to engage, to a degree depending on the amount of credit, in behavior that is deviant from the norms (idiosyncratic) before

group sanctions are applied. Credit differentials are then seen as the result of behavior over time. The individual who, early in interaction, is perceived to make a positive contribution to group progress and satisfaction, while at the same time conforming to the developing norms as a good group member, simultaneously achieves status and earns credits which permit him greater latitude in idiosyncratic behavior later on. These credits he may use to initiate change in some norms. Hollander does suggest, however, that idiosyncrasy credit does not so readily confer power on the leader to alter the expectations of leadership itself. But so long as he maintains his perceived characteristics of task competence and loyalty to the group and to others' expectations of him, he may enjoy sufficient credit to challenge and change prevailing social patterns in the group. It will readily be appreciated that this concept of credits in the perception of group members has values beyond those of resolving a conflict and explaining the possibility of leadership both conforming to norms and exerting influence to reform them. It may be used also as a "mediating concept" in understanding leader rotation and phenomena of succession in the group as task and other features of the situation alter. Individuals who have amassed credits in prior interaction enter upon a new situation with high perceived status, and it may take time for group members to modify these perceptions to recognize the superior value of another in the altered circumstances.

The important aspects of interaction theory (*cf.* Gibb, 1958) may be stated as follows:

1. Groups are mechanisms for achieving individual satisfactions.
2. Any group is a system of interactions within which a structure emerges by the development of relatively stable expectations for the behavior of each member. Such expectations are an expression of each member's interactional relations with all other members and are, of course, determined by the other members' perceptions of his personal attributes and his performance on earlier occasions.
3. This role differentiation is a characteristic of all groups, and some role patterns appear to be universal. However, the nature of the group-task situation, the size of the group, and a great variety of other variables determine the role needs of the group-in-situation.
4. The association of a particular individual member with the performance of a role or pattern of roles is largely determined by the particular attributes of personality, ability, and skill which differentiate him perceptually from other members of the group.
5. Leadership is but one facet, though perhaps the most readily visible facet, of this larger process of role differentiation. Leadership is simply this concept applied to the situation obtaining in a group when the differentiation of roles results in one or some of the parties to the interaction influencing the actions of others in a shared approach to common or compatible goals.
6. Leadership, like any other role behavior, is a function of personal attributes and social system in dynamic interaction. Both leadership structure and individual leader behavior are determined in large part by the nature of the organization in which they occur. Leadership structure is relative, also, to the population characteristics of the group or, in other words, to the attitudes and needs of the followers.

Leadership inevitably embodies many of the qualities of the followers, and the relation between the two may often be so close that it is difficult to determine who influences whom and to what extent. For this reason, it is possible for leadership to be nominal only.

SUMMARY

While interest in leadership and the exercise of influence and power is by no means new, the past 20 years have seen a great increase in attempts to investigate the nature of this relationship both experimentally and by naturalistic observations in industrial, business, political, and other groups. The study of leadership is primarily one aspect of the wider study of differentiated functions within groups. Such differentiation is a mechanism devised for the more efficient operation of groups in the pursuit of their group goals and for the satisfaction of members in the pursuit of those needs which have been group-invested. Leadership refers to that aspect of role differentiation by which all or a large number of group members make use of individual contributions which they perceive to have value in moving the group toward its goals.

In order to understand the leadership phenomenon it has been necessary also to understand the nature of the *group*. It is a necessary part of this concept that there is interaction among its constituent members, who may be two or more in number. A group, however, is not fully defined by the notion of interaction between members. It is important that members of a group should be seen, and see themselves, as having shared or compatible goals, and that they be understood as satisfying individual needs through interaction with others. The ready recognition of common purposes and of differential individual capacity to contribute to one another's satisfactions sets the stage for role differentiation and for leadership. Leadership exists in a group whenever its norms and structure allow the special abilities and resources of one or a few members to be used in the interests of many or of all. Whenever two or more persons interact in the pursuit of a common goal, the relation of leadership and followership soon becomes evident. This relation is characterized by influence or control of one or some group members over others.

Identification of the *leader* is by no means simple, however. It has sometimes been suggested that he be regarded as the individual occupying a given office, but leadership is frequently apparent before group development has proceeded to the point of designated offices. Another suggestion has been that the leader is that individual upon whom the behavior of group members is focused, but a disturbing influence may be the focus of attention and we would not wish to designate this person "leader." Yet another procedure regards the leader as that group member who is so chosen by his colleagues. Perhaps the most objective criterion of leadership available resides in the measurement of the influence of group members on one another. In order to define the leader as that group member who exercises most influence over his fellows, it is necessary to qualify "influence" by insisting that the term leadership applies only when this is voluntarily accepted or when it is in a "shared direction." When influence derives from a power given to one or a few individuals by a source external to the group itself, the relation is rather that of *headship*. Because of the difficulties involved in using any of these forms of definition, it has been proposed that attention be given not to designated leaders but to *leader behavior*.

occurring in a group. Leadership acts may then be defined as the investigator wishes, and leaders can be identified by the relative frequency with which they engage in such acts. One important advantage of conceiving the leadership contributions of individual members in terms of the frequency of their performing leadership functions is that in this way no *a priori* assumptions are made as to the distribution of these functions among members. Leadership may be "focused" or "distributed." There may be a single leader in the group, or many may share the responsibilities and contributions which characterize leading.

Early attempts at description of leader behavior tended to concentrate on the recognition of personality traits which could be said to characterize all leaders. A very wide variety of such traits was explored and, while correlations were, in general, positive, they were rarely large, and it is clear that only a small amount of variance in leader behavior can be accounted for in this way. There are indications that certain traits, such as intelligence, adjustment, dominance, self-confidence, extraversion, and empathy, are frequently found to characterize leaders of various types in a variety of situations. But in every instance the relation of the trait to the leadership role becomes more meaningful if consideration is given to the precise nature of the role. There is abundant evidence that member personalities do make a difference to group performance, and there is every reason to believe that they affect that aspect of the group's behavior to which the leadership concept applies. But other aspects of group behavior—namely, structure, syntality, and task—must also be taken into consideration in attempting a complete description of leader behavior.

Empirical analyses of leader behavior lead us to recognize a limited number of characteristics, among which are initiating and directing action, showing consideration for followers, production emphasis, and social awareness. Such analyses have led also to a recognition that leadership is differently evaluated from above and below. In an organization, those who hold superior positions to that of the leader or head under consideration expect of him that he will insist on strict discipline, follow standard operating procedures closely, and emphasize production. On the other hand, the followers expect and value his mingling with them, his use of consultation procedures, his showing consideration for them and their needs, and his being socially sensitive.

Different people want different things of leadership. Adoption and performance of the leader role are dependent on the situation. Leadership in a formal organization (headship) differs from leadership in an informal organization with respect to both leadership techniques and the emotional relation between leader and followers. Even the followers' preference for consideration behavior may be modified in a hierarchical organization, and it appears that the general claim can be made that followers value most highly that leader behavior which contributes maximally to the individual satisfactions they obtain through the group. Leader behavior is found to be subject to group determination. The expectations of followers, the nature of the task, and the institutionalization of the group are all factors in the situation within which the leader behaves and to which he adapts.

Dynamically, the leader-follower relation must represent satisfaction for some of the needs of both the leader and the followers. The satisfactions of leadership are primarily those of dominance and status, though there is evidence that not all leader behavior stems from these sources. Followers, on the other hand, achieve satisfaction of deep-rooted dependency needs and gain assistance in problem solution. But

these satisfactions are rarely without conflict either for leaders or for followers. Leaders find their instrumental leadership incompatible with popularity, while followers find themselves needing the leader but hating him because of this. This basic ambivalence gives rise to the essential dilemma of leadership in a democracy.

The effects of leadership have been variously examined and variously evaluated. In general, it appears that leadership which shows consideration of the needs of followers, while also insisting on discipline and emphasizing task achievement, is most successful in achieving the twin criteria of superior performance and high morale. Leadership styles commonly designated authoritarian and democratic have been much studied in relation to their respective effects. Greater theoretical sophistication and superior experimental control have, in recent years, indicated clearly that the effects of leadership, like leadership itself, are to be understood only in interactional terms. Which of these styles of leadership achieves most in terms of productivity and satisfaction clearly depends on the nature of the situation in which it occurs and, especially, on the expectations the members hold for the behavior of their leaders. In other words, role prescription for leadership is contingent upon the group-task situation. Indeed, it has been shown rather convincingly that when the situation is either highly favorable or highly unfavorable to leadership an authoritarian style is both expected and effective, while the democratic style is more effective in moderately favorable situations.

For the most part, the leader of any group at a given time is successor to a leader of a previous time. Even observers of the emergence of leadership in small temporary groups find themselves, in fact, observing succession phenomena. Predecessors certainly influence leadership in a number of ways. They are responsible for certain of the expectations of the leader and for some of the institutional rules, the demands of which any successful leader must meet. They are frequently influential in causing the recognition of their successors. The concept of succession also contributes to the analysis of leadership by focusing attention on the matter of sponsorship. It is clear that any leader more nearly satisfies the needs of his sponsors than he does of any other group or subgroup within an organization.

Leadership is an interactional phenomenon, and an interaction theory is required to provide a framework for studies of leadership. The emergence of group structure and the differentiation of functions of group members depend on the interaction of those members, and are general group phenomena. An individual's assumption of the leader role depends not only on the role prescription of the group and on the individual's attributes of personality and command of resources, but also on the member's perception of him as filling that prescription. This, in turn, varies as the situation and the task alter. In general, it may be said that leadership is a function of personality and of the social situation, and of these two in interaction.

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Social Structure and Behavior

WILBERT E. MOORE, Russell Sage Foundation

The ordering of individual human lives in terms of a matrix of social expectations comprises part, or perhaps all, of the distinctively human qualities of behavior. Man is an inevitably social animal, and one whose social behavior is scarcely guided by instinct. He learns social behavior, well or poorly, of one sort or another. He invents values for himself and his collectivities, rules for his conduct, knowledge to aid him in predicting and controlling his environment, gods to reward and punish him, and other ingenious elements of the human condition. This wondrously inventive activity is itself, of course, behavior. Once its products are established in the human consciousness, they become, in turn, guides to behavior.

There are several ways of eliminating the problem of the relation between social structure and behavior, as we shall note more fully later. Social structure may, for example, be taken simply as behavior writ large or generalized, behavior itself being explained in some other way. Or behavior may simply be regarded as the concrete manifestation of structural imperatives, those imperatives being explained in some other way.

The doctrine of equivalence will be rejected in this discussion, for reasons aside from the circumstance that to adopt either mode of arriving at equivalence would

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A considerable time after a revised version of this chapter was completed, it was critically reviewed by Professor Stephen Klineberg at Princeton. His critical views were so persuasive that time alone prevented a new formulation that would more effectively relate the sociological and psychological perspectives on persons acting in social contexts. The present, further revised text represents my attempt to make peace with his constructive suggestions. My gratitude to Professor Klineberg for pointing out the errors in my ways in no way binds him to accept the current formulation. I stand on my own here, but I am indeed a penitent sinner

make extensive discussion unconscionable. Our reasons are empirical and therefore theoretical: not only may the abstractions *social structure* and *behavior* be defined differently for analytical purposes, but also both show ranges of independent variability in their concrete manifestations. In examining the relations between structure and behavior, we shall give scant attention to the psychodynamic processes that, through the concept of *personality*, link the acting individual to the social environment. By placing primary emphasis on the notion of structure as a framework for behavior, we shall be taking a view of the relations between sociology and psychology rather different from that of Inkeles (1963), who highlights the concept of *normal personality* as the needful psychological input for social processes.

Our first task will be to explore the several alternative meanings of "social structure." We shall then treat the alternative views of behavior as an independent and dependent variable with respect to structure. We shall conclude with an examination of the behavioral correlates of various structural categories, with due regard for variability and deviance as manifestations, perhaps, of original sin, but certainly as confirming the problem of nonequivalence that provides the essential excuse for this discussion.

SOCIAL STRUCTURE. ALTERNATIVE MINIMUM DEFINITIONS

It is perhaps an act of self-reassuring bravery on the part of social scientists to use so freely the concept of *social structure*, for it implies that there is something solid, indeed stable, out there to observe. The term *structure* invites architectural images, of edifices occupied or awaiting inhabitants. Yet the term is widely used in all analytic sciences as well as in some, such as geology, that are mainly taxonomic or descriptive. Like biology, the social sciences for the most part straddle this distinction between the analytic and the descriptive, with consequent differences in the meaning of structure.

We shall be tolerantly eclectic and use the term in several distinct senses, for each poses different questions and problems for the relation between structure and behavior. We shall distinguish five uses of the term *social structure*: (1) patterns of action, (2) social systems, (3) social differentiation, (4) statistical, distributive categories, and (5) orderly sequence.

STRUCTURE AS PATTERNS OF ACTION

Perhaps the most widely applicable definition of social structure, and certainly the barest, is that of repeated patterns of action. "The term *structure* as used here means a pattern, i.e., an observable uniformity, of action or operation" (Levy, 1952, p. 57). By this minimal definition one may properly speak of a subatomic, atomic, molecular, or cellular structure, if these terms are taken to signify interaction and not mere form, and indeed of a structure of ocean waves, pulsations of stellar light, sexual behavior of bees, or "bopping" between juvenile gangs. It is not proper, however, if this definition is taken strictly, to speak of the structure of rock strata, of the grammar of an extinct language, or indeed of one of the man-made edifices of our original architectural metaphor. Somewhat regularized (at least not unique) work exchanges among men on the assembly line in an automobile factory would thus constitute a structure, as would any similarly repeated meeting for lunch or

for telling dirty stories around the drinking fountain. The formal administrative organization within which such patterned behavior displays itself would not constitute a structure by this usage, or rather, would constitute a very extensive complex of such patterns, including those bound by formal rules of expectations as well as those that appear to be spontaneous.

Each of our other uses of the term social structure will be found to contain or subsume this most elementary meaning of the term. This basic definition has the advantage of neutrality, of nonspecificity. It has the correlative analytic advantage of avoiding reification of groups and organizations by casting its net more broadly. The daily variations of traffic flows in the central business districts of cities thus turn out to be social structures as surely as do the actions of parishioners participating in an elaborate religious ritual.

The analytic neutrality of this use of the term social structure captures and, in a sense, equates the mate-selection practices of a nonliterate tribe, male primogeniture as a mode of selecting successors to kings, the propensity of American college students to riot in the spring, and the formally announced hours for opening and closing libraries.

As would necessarily be true of an analytic concept so devoid of particular content as to be applicable in a seemingly endless variety of particular contexts, this use of the term social structure has the deficiencies of its virtues. One question that is left entirely open is the explanation for, the etiology of, such patterned action. Is the observed uniformity to be explained in terms of common motivational propensities intrinsic to the actors? If so, are these instinctual or the product of common learning? Can the patterns be interpreted in such nonhuman terms as *symbiosis*, an interdependence of species and their behaviors in a common ecological setting? Or are they explainable only in terms of other elements of social behavior, not yet specified, such as values, norms, role assignments, cognitive expectations, and rewards and penalties?

Now take a different set of problems. What do we mean by patterns or uniformities? If we take the epistemological position that all statements of relationship, in all scientific systems, are probability statements, then "uniformities," though they may not be invariant, will still be significant. (This epistemological position is a very strategic one for social scientists to adopt. Whether because of the complexity of intersecting variables, the correlative difficulty of experimental controls, or the intrinsic randomness of the most elementary behavioral units, invariance in propositional form is rare.) Can we speak of a difference of ten percentage points in the labor-force participation rates of American women aged 35 to 39, as compared with their counterparts aged 45 to 49, as a uniformity? We shall return to problems of temporal patterns, which complicate matters. But even if we suppose the rates and their differences to be fairly durable, can either probability—both of which are far less than unity—be called a uniformity? However, let us not get involved in semantic distinctions that may be trivial. What we seek to discount are the declared or implied claims to superiority of analytically bare concepts. Their utility is quickly exhausted.

The minimal utility of the view of social structure as patterns of action has a special poignancy in the present discussion. If that were all that could be meant by social structure, our mission would now be aborted. The definition of social structure in these terms is essentially behavioral, and thus inductive. Social structure *is* patterned behavior, and that leaves only unpatterned behavior as a residual category.

By suitable reference to conditions, not themselves part of the definition of structure, this approach permits generalizations about covariance: pattern *A* is predictably related to pattern *B*. It is even possible to state orderly sequences of patterns, such as Merton's "status sequences" (Merton, 1957, pp. 368-370). But the mechanism of the relationship, to say nothing of its "explanation," is beyond the reach of analysis, for this requires reference to human actors, singly or in aggregates, and probably reference to social values and norms or to their psychological counterparts as components of motivation. Without such additional "structural" elements, it is impossible to raise such questions as the relation of the individual to the group, or to distinguish normal from deviant patterns (save as a statistical distribution, which is not the same thing), or ideal from actual patterns.

THE SOCIAL-SYSTEM APPROACH

The growing use of the term *system* in sociological discourse probably owes much to the influential theoretical work of Parsons (for example, Parsons, 1951). In any event, it has served to highlight distinctly sociological levels of analysis of human behavior, by emphasizing the emergent properties of any order of phenomena which consists of elements *and their interaction*. In this general sense, social system is a concept no more restrictive or specific than social structure. However, there appears to be a considerable consensus that the term social system will comprise values and rules of conduct (both of which are sometimes regarded as *cultural* elements) as well as interacting individuals: "A social system requires that the units be persons—more properly *actors* or *role-players*—whose interaction is governed by rules or *norms*. Particular systems may be organized as groups, which then take on such additional characteristics as collective goals or *values*" (Moore, 1963c, p. 6).

The concept of social system can be made as elaborate as needed to suit analytical convenience or requirements. For example, the common values of a voluntary association may be few and simple. The "value system" of a large society may be very complex and lacking in total consensus. Moreover, pluralism itself may be valued; thus, in some aspects of social life, integration rests on tolerance rather than on substantive agreement. Similarly, any orderly interaction rests on at least implicit rules of conduct. Yet, when we view whole societies, we can identify complex *systems* of rules relating to major social functions. These aggregations of related norms are conveniently called *institutions*; examples include marriage, property, and political authority. Like values, norms may be highly integrated (as a limiting case) or diversified and even inconsistent. Structural differentiation within a social system leads to questions of relations between structural units, whether or not these entail common or overlapping memberships. Where the individual has plural participation in a functionally differentiated system, concepts like role set and status set become highly relevant, as does role conflict.

It is to be noted that the social-system approach to social structure is not defined in strictly behavioral terms. Acceptance and internalization of values and compliance with normative expectations (whether conscientiously or in response to current sanctions) are left open for determination and explanation. The attributes and actions demanded by the system are specified for the actors. If the actors uniformly have "no resemblance to real persons, living or dead," then the system is a mythical construct rather than an empirically based model. Yet a complete matching is also not to be expected. Apart from the fact that no empirically observed system is completely

integrated, even in purely systemic terms, all rely on somewhat refractory human participants, whose biological variability interacts with variability in precise social experience to produce some measure of indeterminateness. The way and degree whereby the system determines behavior are not made irrelevant by definition, but are subject to inspection.

STRUCTURE AS SOCIAL DIFFERENTIATION

A few sociologists indulge in a use of the term social structure that is much more common among other social scientists: the uneven distribution of power and goods and services in a society, that is, social stratification. This is a curious usage. Of course, if social strata can be identified and ordered by clear criteria according to their relative status, the aggregate is in some sense a social structure. It resembles the geologists' or paleontologists' layering of strata, whence came the term. In no society does such ranking of segments of the population exhaust the significant ways that types and combinations of individuals are differentiated and subjected to prescriptions for their conduct. The extent to which the stratification is predictive of other forms of social organization is highly variable among societies, and the behavioral correlates of social position in this restrictive sense will occupy our attention rather extensively in a subsequent section.

If social stratification is defined, operationally, simply as the unequal rewards accorded to functionally differentiated positions (Davis and Moore, 1945), then questions of the consistency of individuals' positions in various structures are appropriate, as is the question of the extent to which segments of the populations with approximately equal, generalized statuses can be said to constitute a *class* or other type of stratum.

It seems preferable, however, not to limit the term structure to differentiated positions to which relative ranks can be assigned. Rather, the question of equality or varying degrees of inequality is relevant to *any* standardized role relationship. Social differentiation may be "lateral" as well as "vertical" (Hatt, 1950), and in either case an essential structural dimension is how complementarity or coordination is brought about among the specialized positional or behavioral units.

STRUCTURE AS STATISTICAL CATEGORIES

It has pleased social observers and agencies of the state to enumerate, catalog, and classify various attributes and variable qualities of populations. The distribution of any characteristic, classified according to some useful criterion, may be said to constitute a "structure." We may thus properly refer to the age structure or age-sex structure of a population, its ethnic or linguistic structure, the occupational structure of the labor force, income structure, and so on. In a sense, these structures are standardized ways for describing and indeed measuring social differentiation. Records repeated through time permit the measurement of trends in the absolute and relative magnitudes of the characteristics.

Since our concern is with social structure and behavior, we need to note some differences in the significance of statistical distributions of the sort we have been considering. Some of these categories may be viewed as orderly ways of using other structural approaches. Age, sex, nativity, and ethnicity are characteristics over which the individual has little or no control, but it is proper to ask what *ascriptive* relevance

they have for social position and thus role allocation (Linton, 1936). Other categories represent summary measures of the operation of aggregated systems, such as nations or societies—for example, the distribution of population by place of residence (rural-urban, or size of community), educational attainment, income, or occupation. Still others represent summary measures of somehow motivated actions: labor-force participation, urban migration, consumer purchases, voting behavior, church membership.

The distinctions just noted are fine, and for many analytic purposes insignificant. The essential methodological point is that, for the last group of measures, the most convenient question is “What accounts for . . .?” and for the first two groups, the most convenient question is “What are the consequences of . . . ?” It is always permissible to transpose these questions, but it is not always easy. This is not to say that ascriptive categories do not have social origins—they are not data in the sense of “givens” that must not be examined—but only to say that their relation to behavior is most readily seen in terms of consequences rather than antecedents.

STRUCTURE AS ORDERLY SEQUENCE

Structure commonly connotes rigidity, but this connotation is not intrinsic to the proper use of the concept. Social life abounds with predictable sequences as well as with coincidences and interconnections. Thus, for example, there is a temporal order of action and events (Moore, 1963b). Some of that temporal order is repetitively cyclical: days, weeks, months, seasons, years, and perhaps longer periods. The life cycle is clearly such a sequential order, which becomes social when rendered into terms of generations and their succession (Eisenstadt, 1956). As earlier noted with reference to Merton’s concept of “status sequences” (Merton, 1957), one may consider “normal” status transitions as a kind of *career pattern* (Miller and Form, 1949, Wilensky, 1961). Here we have a further choice of approach, intersecting previous distinctions. The career pattern may be identified on entirely inductive grounds, comparable to less intrinsically sequential *patterns of action*. Or we may attend to idealized and normatively prescribed career patterns in a *social system*, and ask how the observed status sequences correspond to these normatively sanctioned expectations.

Still another example of sequential order is provided by Smelser’s (1963) essentially stochastic approach to collective behavior. For a number of distinct types of collective behavior, he identifies the *sequence* of precipitating events. He thereby moves away from the usual approach of cross-sectional, multiple-factor analysis to one that offers promise of providing both necessary and sufficient conditions for specified outcomes. Since most types of so-called collective behavior run counter to the established and sanctioned norms of social systems, it is difficult to view them as social structures in the sense of systems. Thus Smelser’s approach is essentially inductive, based on behavioral sequences. Though this is not a very damning criticism on ordinary scientific grounds, Smelser’s approach leaves us with no problems to study concerning the relation between these sequential structures and behavior.

BEHAVIOR: INDEPENDENT AND DEPENDENT VARIABLE

The conceptual exercise just completed was a necessary prelude to our central concerns with the individual and the aggregate, the behaving actor and the rather complex drama in which he plays his part.

Let us now be clear on an elementary point: individuals behave. They act, feel, think, react, believe, strive. They are born, mature, grow old, and die. It is important to state these simple verities, because sociologists and other social scientists are not always careful in their language: "The American Medical Association took a stand against any governmental support for medical research." "General Electric announced a price increase in fractional horsepower motors." "France declared war against Liechtenstein, and was once more quickly defeated." "Harvard University granted honorary doctorates to five undergraduates on indefinite suspension for violation of the student honor code." "The Smith family regards itself as superior to its rather uncultured neighbors." Statements in this form, though not necessarily these statements, can be read in good newspapers and in otherwise good books in history and social science. For the most part, this is harmless ellipsis. Spokesmen for, representatives of, authorized officials or members of, these organizations made known and otherwise acted upon the policies and practices indicated by the elliptical statements. Groups act through individuals, but it is equally true that individuals act on behalf of groups, or in conformity with other socially sanctioned expectations, such as those relevant to age, sex, occupational category, or educational attainment. Neglect of the first part of the preceding statement can lead to a kind of social anthropomorphism, or the "group mind fallacy" (Allport, 1924). But neglect of the second part of the statement can lead to a kind of atomistic view of human behavior that is equally fallacious. One position is as inane as the other.

Now this partial glimpse into the conceptual snares of dealing with individuals in collective situations has some further implications. If we attend to the nature of societies, or of smaller organized social entities, it is clear that we are dealing with systems of social relationships. These systems have a common feature of great consequence: they constitute an evaluative and normative order. Society is a moral phenomenon (Durkheim, 1953). Thus the operation and continuity of every social system (in the exact sense) depends on a high (though not complete) degree of *moral conformity*. Put in proper, probabilistic terms: most people observe most of the social codes (or expectations) most of the time. Systems differ in their reliance on current sanctions rather than conscientious consent. A system exhibiting a very high degree of "complete conformity"—self-activated behavior by individuals who have internalized the appropriate values and norms—may still incorporate individuals who are responding to immediate rewards and penalties. But it is important to note that there are both empirical and logical limits to the extension of a kind of external, reactive, hedonic view of behavior. One individual's actions may be accounted for by reference to sanctioned expectations of others. But one cannot account for the expectations or the sanctions in these terms. Some portions of the collectivity, and influential portions at that, must believe in the goals and rules, for the system could not otherwise survive the discovery of its mythical character.

It is equally important to note the limits on terror as an instrument of social control. Terror is, indeed, somewhat effective. But aside from the question of what animates the terrorists—and who guards them?—there are prohibitive costs involved in a total regime of personal surveillance. Any social order depends on at least apathetic compliance on the part of substantial segments of its participants, and conscientious compliance at least on the part of those exercising power.

It follows that all enduring social entities depend in some degree on what I have been calling conscientious compliance. In terms of process, *socialization*, in the full sense of internalization of values and norms as well as mere cognitive learning,

can now be seen as a crucial link between the individual and the social structure. It is, we shall see, the uncertainties and ambiguities in that process that make this something less or something more than an endlessly replicating and endlessly redundant state of affairs.

THE SOCIOLOGICAL EXTREME

We turn now to the substantive problems concerned with the intersection of the undeniably individual character of human action and the undeniably systemic character of most of its manifestations. For the moment, we shall treat this as a contest between the disciplines of sociology and psychology for the ownership of man, though eventually, of course, joint and indeed multiple tenancy will have to be countenanced.

For the true-blue sociologist, individual behavior is a manifestation of the mandates of groups or of other social categories. He starts, correctly, with the fact that *society is prior to the individual*. To make society a mere aggregative phenomenon, a summation of individuals or their contractual creation, is processual nonsense. Things do not operate that way, and they never did.

In this connection, a small digression is appropriate. Traditional political philosophy—a tradition from which classical economics derived, and from which the discipline of economics has yet to recover—dealt only with societies or polities or economies populated exclusively by adults, and mainly male adults at that. It thus did not occur to the theorists to inquire how individuals came to have their ideas of sensible order, or justice, or the material goals that would be maximized by self-seeking actors. Some of the silliness of the psychological and sociological assumptions displayed in these respected fields of learning could have been avoided by taking cognizance of the fact that societies replace themselves by biological reproduction and the unavoidable succession of individuals in social positions. Men and women are first boys and girls, from whom one cannot expect the creation of sovereign states or rationalized markets.

But we must push this argument further. The human infant at birth is quite unable to sustain life unaided. It is, moreover, remarkably badly equipped with instincts in the exact sense, that is, complex, unlearned patterns of behavior common to the species. These characteristics of biological man have compensations, which not only account for the survival of the species but also account for its ascendancy by ordinary tests of evolutionary theory. The principal biological compensation is a complex and relatively uncoded nervous system that, by its very "plasticity," permits *learning* and even *creativity*. But that biological capacity would be meaningless without the sociological compensation of relatively stable structures that afford support, tutelage, and orientations to goals and rules that do not exist in the untutored organism.

Let us pass over lightly questions of a strictly evolutionary character—how did the phenomenon of human society emerge?—for these questions can now be answered only by theoretical reconstruction and not by inductive generalization from observations. It does seem clear, however, that intelligence was a crucial evolutionary emergent, and that biological and social evolution have interacted from something like the beginning of man's differentiation as a species (Dobzhansky, 1962; Moore, 1965b). Evolutionary theory of variability and selective adaptation will also

account for intersystem and intrasystem differentiation, but only retrospectively if environmental differences and changes are not independently subjected to a predictive order.

These questions of origins and changes do not figure largely in sociological discourse, where social systems and their distinctions are generally taken as given. This is a shortcoming (Moore, 1963c, pp. 6-11), but not one of crucial significance in the immediate context. Given the nature of biosocial man, and particularly his recruitment as an uncivilized infant, and given the existence of extant social systems, his behavioral characteristics are determined. National character, class, and regional, ethnic, or occupational character become unproblematic. In the *explanatory* sense, individual behavior is accounted for by socialization and social control. That is how it comes to be that individuals act according to their positions in a system that provides a prior order for their lives. In the *predictive* sense, individual behavior and social patterns become an equation which can be read in either direction.

In the extreme sociological position, only apathetic noncompliance and outright deviance spoil the equation, and for these, too, structural sources are sought. This simply requires a more complex and less neatly integrated model of social system which considers contradictory claims, value inconsistency, and outright conflict as realistic aspects of the social environment.

THE PSYCHOLOGICAL EXTREME

For the true-blue psychologist, or at least the one who deals with man at all, it is biological man that is fundamental. He attends to the unlearned characteristics and requirements for survival: to reflexes, drives, and various "needs" (Eysenck, 1953; Miller and Dollard, 1941; Sheldon, 1940; Tomkins, 1962, pp. 243-271). These biological characteristics, if common to the species, or at least common to a separate and generative population, set limits on social variability, and thus in a sense "determine" structure.

To the common biological and psychic characteristics, which set limits to any enduring social system, the psychologist adds individual variability. He doubts the "cookie-cutter" notion of individual role allocation, particularly in nominally ascriptive systems. His doubts arise both because of genetic differences, which imply less standardized raw material than sociological determinism assumes, and because of the complex interplay between these individual differences and the social settings that individuals encounter, which leads to personality as a somewhat independent variable. Thus the social settings themselves are viewed as necessarily more adaptive than sociologists customarily admit.

There is an even more extreme view of individual ascendancy over social prescriptions. This is rarely stated, but it is implicit in the views of various reductionists, to whom social behavior is, after all, individual behavior and can thus be understood properly by studying individuals. By this view, norms and values are mere instrumentalities of individual goal maximization, invented and discarded at will. A somewhat modified view would admit the autonomy of socially sanctioned rules, but would regard them as setting conditions (of unexamined salience) within which psychological processes display themselves. The existence of the rules is of course not thereby explained, except as they are assumed to suit the convenience of unidentified others.

SOME SENSIBLE POSITIONS

Let us now try to cut ourselves a path through the brambles of intellectual disputes. At the very beginning we should acknowledge the legitimacy of scientific specialization and of differing modes of attempting to reduce complex phenomena to understandable and predictable order. Thus, there is nothing improper about dealing with human personality as a system, whereby social prescriptions or social interaction become "inputs" to the system, or relevant conditions of action. There is likewise nothing improper about dealing with organized or patterned pluralities of actors as social systems, whereby actors and actions are seen as either elements in the system or possibly even as a source of inputs to it. Now all that is demanded of us is to examine the relationship between these systems, and to that end we need to establish some points of reference.

The primacy of society

Society is prior to the individual in the temporal sense. It would be silly to deny this primacy, given the incapacity of the human infant at birth. But neither should its significance be exaggerated. Society is either a kind of abstraction, useful for various analytical purposes, or more often than not, in terms of practical effects, it is the polity. In either case, the infant is scarcely born into a society in the full meaning of the term, but into a decentralized concrete structure, normally a family, which represents society only imperfectly. (On the meaning of society, see Levy, 1952, pp. 112-113; Parsons, 1951, p. 19.) In childhood, the individual's encounter with society is virtually always with such decentralized and sometimes rather specialized social units. His care, custody, socialization, and social participation are the functions of the family, the play group, the neighborhood, and occasionally such specific organizations or their representatives as the clinic and the police. These units of society are not only structurally differentiated, but are also subject to chance variability. There can be no assurance that each social unit the child encounters is an exact representative of society, or even of its appropriate functional segment of it. Moreover, the child may be orphaned or the family broken by death, separation, or divorce. (For a review of studies on effects of children's separation from parents, see Yarrow, 1964.) Thus we have to recognize the circumstance that the "agents" of society are not themselves fully coordinated, a circumstance further underscored by the chance variability of any of these agents, even within their approximate spheres of seemingly appropriate jurisdiction.

If we add to this set of partially indeterminate social influences the undeniable fact of variability in the biological raw material to be processed, we come out with a looser set of social processes and products than a pure systemic determinism would have us accept. We are thus led to a recognition of some uncertainties in socialization, for absolute standardization is unlikely.

By extension of this line of reasoning, we should not expect an exact replication of social positions or social roles as individuals are replaced in an ongoing social system. The combination of biological variability with uncertainties in socialization adds up to necessary flexibilities in social behavior, some of which will require explanation in terms of personality. "Role requirements are thus likely to constitute ranges of tolerable behavior rather than highly precise behavioral limitations" (Moore,

1963c, p. 13). It must be added that behavior exceeding the "tolerable" limits is scarcely surprising under these conditions.

Social differentiation and individual differentiation

We are perforce dealing with the interplay between two sets of principles both of which are universal: the fact of social differentiation and the fact of individual differentiation. No social system can ignore such basic biological categories as age and sex, to say nothing of physique, genetic intelligence, and perhaps differences in specific aptitudes that seem to display themselves as unanticipated novelties. Aging, for example, begins with conception, and constitutes both a continuous and discontinuous variable for individual participation in established social orders. "The temporal order of social systems must somehow accommodate to the temporal order of biological man" (Moore, 1966a).

In view of the dual principles of social differentiation and individual differentiation, the match between them is always problematical. In every ongoing human society the social analyst is faced with an intrinsic question: the relative operation and efficacy of *selectivity* and *socialization*. The social solutions to this problem are variable and always partial. This gives rise both to real tensions and uncertainties in the operation of groups and larger social systems, and, for the analyst, to real difficulties in discernment of how these principles operate. The extremes of role theory emphasize only socialization. By this view, any "normal" individual (one may here be begging the question) can be induced to perform the duties of the position to which he is called, and indeed can be expected to internalize the goals and rules that are appropriate (Johnson, 1960). The extremes of stratification theory emphasize only selectivity: the system so operates as to get individuals with appropriate qualifications into the appropriate positions. (Davis and Moore, 1945, come perilously close to that position by giving strong attention to the unequal supply of "talent" for positions of responsibility.) It is not a great deal of help to assert, with undeniable validity, that both principles operate, for this evenhanded solution evades empirical issues that remain unsolved: Under given standards of selectivity, how does socialization occur and what are its limits? Under given systems of socialization, how and where does selectivity occur? When these principles produce contradictions, what adjustments and systemic changes ensue?

The individual and the group

There is an unfailing lack of consistency between individual goals and the collective values attributable to and articulated by representatives of groups (Argyris, 1957; Riesman, 1963). Some of the reasons for this incomplete conjuncture have been noted in previous paragraphs, particularly the probability of incomplete and somewhat erratic socialization, accentuated by variability in the qualities of human supplies to the processing system. There are, however, some additional considerations to be recorded here briefly, which will warrant subsequent, fuller explication.

Short of an unknown and theoretically improbable extreme of the "perfectly integrated" social system, the most compliant individual cannot accede to all demands, even if they are all legitimate, taken one by one. There are three universal scarcities: "... *time, treasure* (or material resources) and *truth* (loyalty or affective energy)" (Moore,

1963c, p. 62). Even in small tribal societies, the integration and changeless stability of which have been consistently exaggerated in anthropological literature, there is no reason to suppose that the denizens lead lives troubled only by coping with the nonhuman environment. The human environment, even in seemingly simple societies, is wondrously complex and cannot fail to bear down on individuals with an uneven and, from time to time, impossibly peremptory hand. We should thus expect role conflict and status inconsistency to be intrinsic and endemic to social systems. The simple, uncomplicated life of primitive people or of the historic past must be a fictitious, wishful reconstruction (Lewis, 1951).

There is, however, sound reason for supposing that problems of inconsistency grow with social differentiation. Where mutually exclusive segments of the population are put in differentiated and presumably complementary positions, problems of integration occur for the viability of the encompassing system. But that is not our present concern; that concern relates to functional differentiation of social demands as they bear on individuals: the family, the church, the polity, the work place, and a host of interest-oriented and expressive associations which provide the person with a highly differentiated life space and temporal spectrum. The more highly differentiated the social system in this sense, the more fractional the individual's segmental participation. This must necessarily increase the probability of role conflict, for the chance that all this works out neatly for each individual is fairly remote. By the same token, these circumstances increase the chances of individual alienation in any particular action context, for the multiplication of positions reduces the probability of a uniform fit between the individual and the group, whether through selectivity or socialization.

Though it might be argued that a sufficiently wide variety of social patterns and social organizations would increase the chance of the individual's finding his particular niche in every instance (that is, an acceptable "status set"), it must be noted that some of the demands on the individual are essentially ascriptive, such as age and sex norms, and for many others the individual's freedom of choice will be restricted in various ways and various degrees. Even if all choices were seemingly open, they could scarcely be also independent. "Tie-ins" will be common if there is anything at all to the notion of social system. Since not all of these role requirements are likely to be equally and positively valued, there are often conflicts between them; the requirements of one role may become "costs" to other, related roles. The man elected to an exclusive club may find that he is also expected to serve on the board of directors of a local charity. Membership in a fraternal order or service club may entail an unofficial and unspoken commitment to participate in recreational activities favored by a majority of members, or even to engage in partisan political activity, though the association as such is nominally nonpolitical.

By this line of argument, some of the phenomena of alienation can be attributed to the attempt by individuals to reduce the cost of "tied-in" role demands. They seek to "accentuate the positive" and to "minimize the negative." This assumes, of course, a kind of fixed quantum of commitment, and thus a kind of compensatory view of social allegiance. We shall later criticize this assumption as not uniformly valid.

From the point of view of the personality as a system, it thus becomes meaningful to inquire into the relative salience of various social involvements and commitments. This is at least as legitimate a personality inventory as other character traits, though

the two approaches are not mutually exclusive. From the point of view of any concrete social structure, it becomes meaningful to inquire into the distribution of members with respect to their reliability and apparent loyalty, since we have reason to suspect that it will not be uniform. But we also cannot assume that the "total social-participation scores" of individuals—as measured, say, by man-hours of involvement—will be equal. There is accordingly no reason to suppose that concrete social structures operate in a neat, complementary balance, one's loss being another's gain.

The ideal and the actual

Whenever there is a normative order—a set of rules and their sanctions—there is a high likelihood of some deviation. Norms are an intrinsic feature of structures in the sense of social systems, but it could be demonstrated that sanctioned expectations apply also to each of the other concepts of structure. Important reasons for deviation have been indicated already. These lead, however, to a further social reality: the universal gap between the ideal and the actual. Ideal norms are standards for approximation, rarely, if ever, reached. Failure to achieve them does not make them irrelevant; for them to be irrelevant, the system should suffer no change were they simply removed, and such a situation would be rare indeed.

The gap between the ideal and the actual is a major and universal source of change, as I have previously argued (Moore, 1963c, pp. 18–21). Here the point is simply cautionary: if one starts from ideal prescriptions for behavior, one should not expect complete predictability. (This is a fairly common methodological failing of anthropological field studies, for the field methods are better designed to yield ideal patterns than they are to yield generalizations about actual patterns as related to those ideals.) Predictability of actual patterns will be enhanced, however, if attention is also given to such phenomena as "institutionalized evasions" (Merton, 1957, p. 318). Divorce, for example, is an institutionalized evasion of the normative prescription for durable monogamous unions; and so, for that matter, is clerical celibacy. What Gouldner (1954) calls "indulgency patterns" at the workplace—permissible tardiness, or a "second chance" following violation of an important and seemingly mandatory rule—are clear examples of actual norms. Note, however, that such practices make no sense unless one takes account of the ideal patterns. Emphasis on practical norms is not an argument for mindless behaviorism.

Some methodological traps

As one moves from the unit act through various intermediate levels—categories of acts typical of the individual, a syndrome of behavioral characteristics, a *personality type*, patterns of action attributable to a group, *group structure*, typical linking mechanisms among subsystems, the analytic components of a society, the *type of society*, and *all societies*—detailed information is lost in each successive stage of generalization. The succession of levels of generality just displayed implies a relatively low level of precise predictability from one end of the spectrum to the other. This is not to argue for "getting back to the facts," or "bringing men back in" (Homans, 1964), for such fundamentalist doctrines miss the point and the power of scientific generalization. To be able to say, as we can, that any society will have an orderly system of role differentiation is a significant accomplishment, not to be undone by

critics who do not understand the logic of analytic science. It remains true that the process of generalization is reversible only by adding back the special information, the lower orders of generalization, that were lost in the original endeavor. The unit act with which we started may well exemplify role differentiation, but to say more about it in a meaningful way is likely to require retracing the steps indicated, rescuing suppressed information along the way. This logical principle is so elementary that one can only be dismayed when it is ignored by what appear to be otherwise competent scholars. We cannot prevent the scholar from operating at the level that he prefers, but we may properly object when he gets pious about it.

What we have been discussing is, in effect, a corollary of the *reductionist fallacy*, which is by no means unknown among psychologists, though mostly those of earlier vintage (Freud, 1933; McDougall, 1908). Since social behavior is individual behavior, the argument goes, we can properly understand the former by exclusive attention to the latter. Nonsense. If social behavior is properly observed as organized into systems, as it clearly is, then analysis of such systems requires attention to the relevant elements *and their relationships*. The latter represent the emergent, systemic properties, and they are irreducible to the isolated elements (Durkheim, 1933). This is true of atomic, molecular, cellular, organic, and cosmic systems, and again one can only display impatience when it is ignored with respect to human behavior.

But, of course, reductionism goes on within the distinctively social sciences (that is, disciplines other than psychology), too. Economists commonly deal with motivated individuals whose psychic structure is not acceptable to knowledgeable psychologists, and whose institutional environment is not acceptable to knowledgeable sociologists. Even anthropologists, who tend to prefer "holistic interpretations," commonly exhibit preferences for the small-scale system rather than the large. Oscar Lewis, for example, who has been a leading critic of foolish conceptions of "folk society" (Lewis, 1951), permits himself to say, "Social life is not a mass phenomenon. It occurs for the most part in small groups . . ." (Lewis, 1965, p. 497). The problem is that the latter part of Lewis's assertion is demonstrably true as measured, say, by time budgets, and the former part of the assertion neither follows logically nor has any empirical warrant in the contemporary world. The existence of group and organizational involvements does not preclude social life as a mass phenomenon, which from time to time becomes a palpable reality and at other times a realistic generalization of and framework for more concretely organized social relationships. Again, the greater comfort that anthropologists feel with small collectivities (including small "cultures") is a preference we can neither properly forbid nor take very seriously. This is not to reject outright Lewis's contention (1965, pp. 466-498) that large-system constructs—his concern is with cities in the discussion cited—may be too generalized for predicting personality; the question is empirical, and not to be settled by simply declaring that only smaller entities matter.

A third methodological problem has special cogency in the present context. In no science can one predict unique attributes or events, though in some one may be able to "understand" them *a posteriori* (Skinner, 1953). When dealing with individual behavior, both psychologists and sociologists properly deal with a probability distribution of a class of attributes or events. The psychologist may attempt his prediction on the basis of a *personality type* (with some allowance for error because of individual variations), and the sociologist may attempt to proceed on the basis of institutionalized *role prescriptions* (at least equal allowances for error in actual per-

formance being necessary). Neither can guarantee perfect success in the single case. And the juxtaposition of these predictive mechanisms is the recurrent, undercurrent theme of our present exercise.

The intersection of changing individuals and changing structures

It has been conventional for sociologists and social psychologists, operating with models of stable structures and individual recruits to them, to view individual placement in differentiated positions as a kind of once-for-all process. Believers in fairly common socialization but unequal talents and other personality traits will opt for sorting mechanisms. Believers in the unchallenged priority of social systems over fairly plastic human raw materials will opt for differential socialization. Both of these positions miss essential points, and we must set them right. Several fundamental facts will be asserted here, their behavioral implications to be explored subsequently:

1. *The human individual has a life cycle, which for any individual or across any aggregate of individuals is a combination of nature and nurture. We shall not dwell here on the structural determinants of variations in the length of life, but only insist that there is an inherent "developmental" process in the human organism and its capacities. This developmental process includes personality formation. Any notion of single sorting, or proceeding over a brief span from the savage infant to the civilized adult (Davns, 1949, p. 145), has to be false in all societies everywhere. It is not even a useful fiction; it is simply wrong (see Brim, 1965).*
2. *The intrinsic problem of succession in any enduring structure will inevitably introduce changes, even if minor ones, in the actual manner of role performance.*
3. *There are other sources of change in structures in addition to the vacillation, drift, or evolution arising from mere succession. These include changing environmental adaptation, closer approximation to ideals, shifting balances of power arising from intrinsic conflicts, and deliberate changes instituted for progressive goals (Moore, 1963c, pp. 11-21). The point of present relevance is to add a changing structure to changing individuals. Social placement and eliciting appropriate behavior thus turn out to be much more complex problems than appear in simple-minded formulations.*

THE STRUCTURAL STANCE: SUMMARY

Since this *Handbook* is likely to fall into the hands of psychologically oriented students of social psychology, the sociological orientations of this chapter and its author should be made clear.

The position taken here is that there are, perhaps by definition, no unmotivated acts, and therefore that the structural determinants of behavior *always* involve personality characteristics. But the further position is taken, and that rather assertively in view of the evidence, that the prediction of patterned behavior in man is most safely grounded on the social situation in which the actor finds himself, *and not*, in the first instance, *on personality variables*.

There is no desire here, at least overtly, to deny the importance of the personality as a system of genetic, conditioned, unconsciously motivated drives and needs, and consciously perceived aspirations. There is, in effect, an ego structure to be found in the vast preponderance of human actors beyond the earliest stage of infancy. I

should by no means reject the view that the individual, as presented here in the guise of a personality construct, is therefore both a social actor and an independent source of both reinforcement and of variability in social action.

The essential questions are those of level of generalization and type of regularity sought. For the understanding and prediction of intergroup (or—barbarous term—“interstructural”) differences, personality variables may afford little information. For the interpretation of intragroup variability, cross-sectional or sequential, personality characteristics are of critical importance. Our focus here on the former range of problems is selective but not preclusive.

For the neglect of what personality brings to a social encounter or bit of patterned behavior, the sociologist stands accused of a dreadful fault: he fails to comprehend that the actor is no mere pawn, and may add to or detract from prescribed actions. For the assumption that human actors (with their hopefully detectable personality differences) comprise all that is important in patterned social behavior, the psychologist stands accused of an equal fault: he fails to perceive that *without a social order there is no personality*, and therefore that the individual contributions to any set of social circumstances may be small because of the dominance of structural demands.

CURRENT STATE. STRUCTURAL AND BEHAVIORAL CATEGORIES

We must now approach, even if hesitantly, the empirical question: “In what ways are social structure and behavior related?” The long preliminaries seemed essential, if not exactly entertaining, but now we should be ready for the main event. We shall still have to deal with materials selectively, and rely on the many related chapters in these volumes for other facets of a relationship that could be made equivalent to social psychology, capitalized and writ large. We shall, for example, have nothing to say about behavior in small groups, or so-called group dynamics—which, as I have elsewhere noted with respect to most of the research results, “. . . neither concerns groups as small-scale social systems nor changes in the significant dimensions of those systems” (Moore, 1963c, p. 55). In order to keep some semblance of order in a not very orderly array of established principles, we shall revert to the several meanings of social structure earlier displayed, and examine their behavioral correlates or consequences.

BEHAVIOR RELATED TO PATTERNS OF ACTION

Since patterns of action are essentially derived by induction from behavior, we do not have a lot to examine by way of relationship. Nevertheless, the equivalence is not complete, and the lack of complete correspondence can be made modestly instructive. The first point to be noted is that precise uniformity of behavior is unlikely in any context of action. Thus, to speak of a “pattern of action” almost certainly entails a statistical norm—presumably a *mode*, such as the most frequent value in a distribution. For any particular action pattern, some variant of the *J*-curve rule is likely to prevail (Allport, 1934). If we are willing to accept a simple distinction between pattern conformity and nonconformity, we shall not get the full shape of the deviations and certainly not its significance in explanatory terms. We may, for example, accept the notion that observed failure to follow the pattern is due to “chance” or “accident.” This is a neutral and cautious way of expressing ignorance. If the

same individuals show up on repeated observation among the "deviants," we may at least ask what makes them accident-prone.

If we recognize and record degrees of departure from pattern, we shall come closer to the proper shape of the *J*-curve. Most drivers, let us say, slow down for amber traffic signals, stopping if possible, and uniformly stop for red lights. A smaller proportion will stop for red lights but "run the yellow." A still smaller proportion violate the red light. But by now we have departed, surreptitiously, from a pure behavior interpretation, for we are recognizing the existence of norms—or at least of expectations, and degrees of their violation. Indeed, if one went about this study as a sort of natural-history observation, it might take a while to detect the degrees of deviance. The explanation of these exceptional cases would be scarcely possible, and the curious color-coded regulation of the modal behavior could be recorded but scarcely accounted for without reference to administrative rules.

But let us carry this sort of behavioristic observation a step further. Suppose that we are dealing with a regularity of behavior that is not written into a rule book somewhere. The daily and weekly flow of automobile traffic in a metropolitan area is guided by explicit rules of the road with respect to operation of the vehicle, but the temporal order of these flows requires reference to other normatively sanctioned practices relating to hours of work in clock time, length of the workweek, holidays, vacations, and so on. The predictable temporal variations in mass and direction of traffic flows may be viewed as by-products of other structural patterns. Yet the traffic patterns have a kind of independent authenticity, leading to palliative measures on the part of traffic police, possibly to staggering of work hours on the part of employers, and to off-hours travel for those not normally constrained by the modal behavior. Thus traffic patterns exemplify "unintended but recognized structures" (Levy, 1952, pp. 87–88). The point of present interest is that pattern recognition is likely to have normative consequences, and to elicit goal-oriented behavior to sustain or counteract the pattern.

Although it would be hard to find an action pattern at this level that could not be traced to one or more rules of conduct, let us imagine one that arises out of a coincidence of fairly independent events. Housewives may arrive at preferred grocery shopping days independently of each other and independently of predictable variations of supplies in the markets. The housewives' behavior may become a pattern in our current, limited sense. However, the circumstance of repeated encounters with recognized coparticipants may well provide the minimum conditions for interactions and for attaching some slight normative value to expectations. Deviations from the pattern are then likely to call at least for expressed surprise, which may be taken as mild reproof. What we are suggesting is that structures as patterns of action are likely to evolve into incipient social systems. They thereby cease to be mere generalizations of observed behavior, and become an authentic source of behavioral cues.

BEHAVIOR RELATED TO SOCIAL SYSTEMS

When we inquire into the behavioral implications of social systems, we are at least dealing with two sets of phenomena that are analytically distinguishable. Because of the emergent properties of social systems with respect to collective values and norms that entail sanctions on behalf of the collectivity, social systems are not mere gen-

eralizations of patterned behavior. We are not here indulging in the “group mind fallacy,” but neither are we willing to countenance the “reductionist fallacy.” A social system commands the allegiance of at least part—and presumably a major part—of the participants that comprise its members or actors, and these loyal adherents “police” one another in the maintenance of virtue, but also impose expectations and sanctions on less committed members or actual miscreants.

Social control and deviance

It seems appropriate to revive the old-fashioned sociological term, *social control*, as representing the spectrum of modes whereby social systems induce or ensure normal compliance on the part of members. Social control thus comprises Sumner's classic distinctions of degree of control and correlative degree of negative sanctions for violators: *folkways* (it is normally expected), *mores* (you ought to behave), and *laws* (you must comply) (Sumner, 1907). But the term also comprises finer gradations and combinations of these external controls, and, equally important, the processes whereby individuals internalize the moral order through socialization.

Generally, the psychological interpretation of individual nonconformity has been to emphasize autonomous drives by the individual, which occasionally break through the restraints of civilization. In Freudian and some post-Freudian interpretations, individual instinct is juxtaposed with social constraints, with emphasis on the tensions between the two (Aichorn, 1935; Freud, 1930). Sociologists, on the other hand, generally view deviant behavior as well as compliant behavior as socially produced, noting that the goals of human behavior are socially learned or socially conditioned and not properly instinctual.

Perhaps the most effective recent attempt to order the types and sources of social deviation has been Merton's analysis in his essay on “Social Structure and Anomie” (Merton, 1957), and the subsequent amendments and refinements introduced by Merton (1957) in his second essay and by others (Cloward, 1959; Dubin, 1959). By this view, conforming behavior requires acceptance both of the values (cultural goals, in Merton's language) and the norms (institutional means—later, norms—in Merton's language). Deviant behavior may arise from adhering to goals while departing from approved means (*innovation*), from rejecting values while complying with standard rules (*ritualism*), or from rejecting both values and norms (*retreatism*). Merton adds one more deviant category, the rejection of extant values and norms but the espousal of others (*rebellion*).

The virtues of this approach are many. They prominently include the recognition of much of criminal behavior, such as that of the professional criminal and some amateur crimes against property, as complying with success values and being deviant only in the means pursued. It is also useful to recognize as deviant the compulsive following of rules regardless of their current consistency with the values or mission of organized action. (Such actions commonly go unpunished, for it is generally the norms and not the values that carry sanctions. Whether oral rejection of values—for example, patriotism, belief in God, or the justice of corporate policy—without other overt acts of rejection is punishable behavior has been a troubled legal question for millennia.)

Merton, moreover, does not assume an almost perfectly integrated social system, which would make deviant behavior an *accident* of imperfect socialization. Rather, he attends primarily to inconsistency in values and in norms within observable

concrete systems, and particularly in large and complex ones. It is to these inconsistencies that he attributes his several forms of deviation. This is not quite the position of moral man and immoral society, for Merton does not foolishly attempt to attribute any moral qualities to nonsocial man, who must remain a rather meaningless abstraction. This is, rather, ambivalent and ambiguous man in a society that is also inconsistent.

This approach to compliance and deviance warrants some extension, and also one or two critical comments. One extension that is partially implied but not quite reached in Merton's own second essay on the topic of "anomie" is that of *evasive innovation*. Merton's original formulation implied that there exists a rule governing every conceivable alternative means for achieving socially held values. This surely exaggerates the inventive ingenuity of past formulators of rules, and underestimates the ingenuity of current actors. Innovation involves, from time to time, not solely "... the use of institutionally proscribed means for attaining a culturally valued goal" (Merton, 1957, p. 181), but also the use of behavior that is genuinely novel. This is one major source of the *principle of normative accumulation* that applies to all enduring social systems (Moore, 1963c, pp. 26-27). A still further extension of this amendment requires the recognition that in contemporary, modernized societies, change is institutionalized in many areas of social life, with positive values attached to it and procedures partially prescribed (for example, scientific research) (Moore, 1963c, pp. 58, 68). We are still, it should be noted, discussing the structural sources of behavior, but the structure is getting more complicated.

The importance of evasive innovation is enhanced by attention to the importance of *ideal* values and norms, noted earlier. Some of Merton's discussion of his distinction between "cultural structure" and "social structure" in his second essay (1957, p. 162) implies ideal and actual practices, but he does not recognize the point, and that adds to the confusion of his quite artificial distinction between the cultural and the social. The latter distinction is not the same as that between the ideal and the actual. Both are intrinsic to any social system, and thus help to account for such otherwise anomalous behavior as overconformity, which may aid in approximating ideal standards, though being undeniably troublesome in the particular context.

Still another complication is introduced if we take into account value differences applicable to different segments of a society. Cohen, for example, has argued that at least some behavior of (lower-class) juvenile delinquents is simply not oriented to what others (by whom the behavior is regarded as deviant) have identified as dominant values, but rather is in conformity with lower-class values, or at least with a "delinquent sub-culture" (Cohen, 1955). The same might be said of beatniks, the "jet set," or other identifiable segments of the population with distinctive behavior patterns. This raises issues concerning the proper referent for the term "social system," for if by that is meant a large-scale and complex system such as, say, the United States, then too much internal differentiation relating to behavior that *is not primarily oriented to the system as a whole* may be obscured. Some of this behavior we shall bring under inspection in ensuing paragraphs devoted to smaller and somewhat more coherent systems; other manifestations of behavior within subsystems will turn up when we subsequently shift our attention to social structure in the special sense of social differentiation.

A final conceptual note must be added on social control and deviance, for it has important implications for behavioral interpretations. The concept of *anomie* as used by Durkheim (1951) refers to "normlessness." It is an attribute of a social system

(or at least of a social situation) that in significant contexts simply does not provide guides to behavior. Merton, while referring to Durkheim's usage in his first essay (Merton, 1957, p. 135), promptly extends the term to situations in which the regulatory system is by no means wanting. In the second essay, Merton reaffirms his use of the term as referring to a quality of the social situation and not to subjective states of mind (Merton, 1957, p. 162). Yet he still misses Durkheim's special point, which is that certain objective social situations do not provide effective guides to behavior. The consequence is not one of Merton's types of what we might call "structured deviation," but rather what Levy has identified as "individualism by default" (Levy, 1965). Such situations may be encountered where there has been a radical, discontinuous change in the polity or the economy, for example, devastating military defeat. It is not inconsistency in social control but its absence that is likely to produce, temporarily, a kind of law of the jungle, restraints arising only from prior habit and socialized conduct—now somewhat meaningless—and by purely hedonic acts and coalitions. Social control has literally broken down, and deviance is the "norm" in the sense of what one must expect. Such a situation is inimical to continued human existence and will be superseded either by a measure of order, imposed in some manner, or by a kind of Hobbesian state of nature in which few survive, and that precariously.

The constraints of groups

The extent to which groups exercise constraints over their members has long been recognized as a variable quality of group phenomena (Sorokin, 1947). But here we must be cautious in our use of the term "constraint." If the connotation of involuntary compliance is admitted, then it is probable that constraint is near its maximum in the administrative organization or bureaucracy—which, however, normally still allows at least the protection of alternative employments through operation of a labor market—and at its maximum in the dictatorial, totalitarian state. If, however, one means by constraint simply the range of the individual's energy and loyalty (and possibly time and treasure) caught up in group-relevant activities, then the small, multifaceted, so-called "primary" group must take precedence. There is nothing so stultifying to creativity as the highly formal, bureaucratic organization—except the tidy little informal group.

Much of the research literature relating to group-determined behavior either refers to so-called small-group behavior, over which we have manifested a conspicuous impatience, or with partial individual involvement in a variety of functionally differentiated groups. For the latter, and often for the former, the concept of *role* figures prominently.

However, I believe some elementary distinctions are long overdue in the discussion of groups and individual behavior. Let us start with a limiting case, the truly totalitarian group, which comprises the *total* social participation not only of any individual, but also of all individuals in the encompassing system. (Its counterpart is a *pluralistic* system.) The leaders of contemporary totalitarian states in their fascist or communist variety aim at this comprehensiveness, and like all such efforts, they fail in varying degrees. But the social type, as a model, has a kind of gruesome interest. In principle, all internal differentiation involves a sort of balancing complementarity, and the totality is an "integrated structure." Where subsystems must be widely countenanced, as in the complex contemporary totalitarian state, each of those sub-

systems is bound to central organs of control by clear lines of accountability, but each individual owes also a direct allegiance to the central state and its leaders and professed ideologies. All this is planned and explicitly disciplined. It differs only in complexity and in formality of controls from the (similarly exaggerated) functionally integrated tribal society where the individual has mostly indirect but some direct linkages with the overall system.

The concept of role behavior is permissible in such neatly integrated and tightly centralized social systems, but it will have primary significance where the system is actually not operating according to the ideal model.

We must now add some additional concepts relevant to group behavior: *complementarity* (and its opposite, *independence*) and *preclusiveness* (and its opposite, *overlapping memberships*).

These distinctions are analytically separate; they are not simply redundant expressions of the same point. Either part of any of the dichotomous distinctions (which are almost certainly scales, if examined closely) can be linked with either part of each other one. For example, complementarity may exist among preclusive groups, each of which is essentially totalitarian, at least in the sense of claims on the loyalty of members. The type case here is the traditional Indian caste, membership in which is preclusive of other caste identification and defines the totality of socially relevant behavior. Yet the castes are themselves complementary in function and thus interdependent within some broader framework of social placement and social behavior.

Preclusive groups need not be totalitarian, but only mutually exclusive in a particular context of intergroup behavior. For example, physicians and nurses in a hospital, or managers and workers in an industrial organization, have complementary positions, and membership in one group normally bars one from membership in the other. But none of these groups is totalitarian in its claims on members, and so there is a determinable probability that persons participating in these complementary preclusive groups will find themselves in the same social groups in other contexts of action.

Now the point with respect to the relations between specialized, complementary, but preclusive groups is that we are dealing with genuine intergroup relations which cannot be reduced to merely individual terms. Of course, in these situations individuals enact roles, and indeed here the term tends to be used in its proper systemic sense: individuals are carrying out the prescriptions of the drama in which they find themselves, but the drama is the proper focus of attention, not the players. Concepts like role conflict and status consistency hardly apply in the particular context of preclusive groups. These problems get involved only as mutual exclusiveness of group membership breaks down in *other* functional contexts—when, for example, occupational antagonists find themselves members of the same church or voluntary association.

Complementarity may not involve interdependence between preclusive groups, but rather organized differentiation across the spectrum of social functions. Thus, labor-force participation or membership in a manufacturing corporation does not preclude family life, church membership, political participation, or a variety of other complementary activities. Some members of some groups will behave in a strictly one-group context, either because they are not involved in some parts of the spectrum of participation (for example, the nonworking housewife in her relations with her husband's company or her children's school) or because a particular group involve-

ment has exceptionally high *salience* (housewives again, or company executives, clergymen, political officials). Yet multiple participation is scarcely to be avoided wherever organized functional differentiation of life activities has been established and the relations between groups are likely to involve the multiply participating individual in role conflicts. Solutions such as temporal-spatial separation (role segmentation) and the determination of priorities in case of potential conflict provide common alternatives (Goode, 1960). Actual role suppression, the simple abandonment of some functionally distinct obligations, is likely to be regarded as pathologically unbalanced behavior in the individual. If generalized in a uniform rather than offsetting manner—for example, if everyone pays attention to his occupation but not to his family or the conduct of political affairs—the consequence is *socially* pathological, prejudicing the continuity of a function requisite for the durability of the encompassing system. Tumin (1956) has argued this point at both social and individual levels with regard to the pervasive power of the economy in other nominally distinct functional contexts.

We now move to the opposite extreme from the totalitarian system with only modest internal differentiation. This opposite comprises the social situation which is *pluralistic*, comprising *independent* groups, but with *overlapping memberships*. Such a social milieu is especially exemplified in the context of a myriad of voluntary associations, whether interest-oriented or primarily recreational and expressive in their announced values (Moore, 1963b, pp. 104–114). Now interest groups may in fact be preclusive with reference to others representing hostile interests, and this may produce a kind of complementarity in the sense that the organization to promote one interest may make competing organizations representing other interests rationally necessary. Here, pure role behavior *in the intergroup context* is again to be expected. With other associations, however, such complementarity and interdependence as can be detected are likely to arise only when the quest for individual participants intersects with the scarce resources of potential candidates.

Role conflict is likely once more when voluntary associations compete with each other and with more structurally essential forms of social participation. The cross-pressured individual has not only segmentation and priority criteria at his disposal, but also the additional alternative of outright *role suppression*. If this alternative is generalized for any particular group, its consequences may be collectively fatal to the organizers' aspirations, but scarcely crucial for the total society.

Short of simple nonparticipation or group failure, it should be expected that the individual's behavior will be unequally constrained by the optional (and indeed by all) groups of which he is a part. Our interest here is not primarily with the relatively mandatory claims of organizations such as corporations and other work organizations, but with behavior in relatively optional forms of social participation. Viewed in terms of the organized collectivity, the participation of members should be expected to be highly unequal, if for no other reason than the individually variable *salience* of various social involvements. This leads to the distinction, from an organizational standpoint, between the active center and the passive periphery, or to finer gradations in terms of some index of participation (Moore, 1963b, pp. 106–114). The immediate moral of this variable participation is that group membership will be unequally predictive of behavior, unless corrected for gradations of involvement.

We are, however, faced with a further complication, that at the individual level we cannot count on compensatory behavior in various contexts of social action.

Here is where "psychological" dimensions reenter, for *individuals have variable cumulative participation scores*. Moore and Feldman (1960, p. 64) suggested on theoretical grounds that participation and apathy are each self-reinforcing rather than compensatory (thus contradicting notions that frustration leads to diverted activity), and that view has been given partial independent confirmation (Wilensky, 1961). The immediate moral of this variable cumulative social participation by individuals is that group membership, even after correction for gradations of involvement, and after cumulation across all memberships, may not adequately predict individual behavior. Such prediction is likely to have special relevance, in appropriate contexts, for the high-participants and their near counterparts. For the low-participants and "nonjoiners," formal group membership is a weak or worthless tool for detecting behavior. Here, one must revert to the individual in his successive life experiences, hopefully to find in the cumulative encounter with frustration in socially sanctioned activities the predictive sources of current withdrawal.

The context of this discussion has been participation in organized social activities that are optional for any individual. But the point we have just been pursuing can be generalized further. If the activities are truly optional, the penalties to the individual for nonparticipation are fairly minor. But such withdrawal is also likely to extend to all social contexts, and failure in some of them is no minor, optional matter. The nonparticipant in truly optional associations is likely also to have a minimal involvement with work, family, church, and community, or to have none at all. In these firmly institutionalized contexts of action, his withdrawal is plainly deviant.

We are dealing with the general failure of complex social systems to catch up some nominal members in an encompassing net. However, let us not get carried away into a view of such resistant behavior as somehow individually self-assertive and heroic. Under extremely rare circumstances it may be so regarded, though the constructive innovator or revolutionist finds it convenient not to fight the "system" on all fronts simultaneously. But we are dealing here with failures. Across social time and social space, publicly held social theories have differed as to the individual or social responsibility for such failures. Indeed, scientific and otherwise intellectual views vary from a kind of biological or psychic inevitability (measures of inherent competence), a kind of moralistic view that (presumably competent) individuals exhibit unequal "strength of character," and a kind of sociologistic view that society dooms its failures and overt deviants to their dismal state. Social scientists have little to say on the second view and entertain an eminently sound position that no one does, but otherwise try to parcel out cases of failure and their causes, since no categorically general view is likely to encompass the range of carefully observed phenomena.

Representative types of groups

Groups are classifiable in as many ways as there are differences in attributes or dimensions of possible interest to analysts. It is also possible to distinguish, somewhat crudely, composite types. We shall deal with the behavioral correlates of three such types, to illustrate the degree of specificity that particular social systems involve.

The *family* is apparently a universal feature of human societies. It uniformly provides for regulated adult sexuality (though its monopoly on such behavior is unequally established), for legitimate procreation, initial social placement, and early socialization of the young. This means that there are certain required role relation-

ships: between adults, according to a sexual division of functions; between generations (with the responsibilities of parents also commonly differentiated by sex, and the socialization of the young similarly differentiated); between older and younger siblings, if for no other reason than the greater "maturity" of older children. Certain other types of behavior are also intrinsic to family structure. Given the universality of the incest taboo, sexual relationships in the narrow sense are limited to those involved in marital unions, and are forbidden between generations and among siblings. But the incest taboo also requires that separate lineages be joined in each marriage. Thus, whether the main way of tracing lineage is masculine, feminine, or both, each married person requires a set of rules for dealing with affinal "kinsmen," that is, in-laws. This means, further, that there is always some strain between adult generations, regardless of the lineage system or other kinship variables.

The family or kinship is often called the "microcosm of society," but that is clearly an exaggeration. Again, given the incest taboo, the family cannot be a self-subsistent unit in terms of sexual recruitment, and it is commonly less than self-reliant in other respects also. Nevertheless, one can observe that the family performs political functions (the distribution of authority according to generation, sex, and relative age), economic functions (it is often a collaborative producing unit, with division of labor at least by age and sex, and always a unit for economic distribution), educational functions (particularly with regard to the untutored young), and affective functions (a relationship of stable intimacy on which socialization depends, and, in modern societies, one of the few places where affectivity may be legitimately displayed).

The host of studies concerning family functioning and malfunctioning as they relate to individual behavior defies succinct summary. Certain points, however, warrant emphasis. They have been selected less randomly than may appear. First, the extent to which the family and more extended kinship relations govern behavior—the proportion of the individual's life space so involved—is quite variable. It is inversely related to the functional differentiation of social systems in other respects. Second, in no society will the family's claim on the individual be totalitarian, but in some the approximation will be close. Third, the uniformity or diversity of family structure and functioning (for example, with respect to child-rearing practices) is variable from society to society. But cross-sectional diversity is to be expected in any society, partly for reasons of differential position of families in established social systems, partly because of essentially idiosyncratic variations. The range of variation from both sources is likely to be greater in highly differentiated societies.

The norm of family continuity, not only of the primary family through the period of child rearing but also of the lineage through successive generations, is universal, and universally subject to evasion or violation. The sources of discontinuity include premature mortality, but also marital and intergenerational discord. The contemporary western family is buffeted by a host of strains, but to predict its demise from loss of functions is foolishness of an advanced order. The failure of some families to contain the behavior of some of their members indicates that families are given responsibilities of emotional satisfaction that are too great for some units to sustain.

In modern American society, the family remains an anchoring point for most members of the society. The proportion of adults who remain unmarried has always been small, and has been declining for some decades. Widowers tend to remarry, though many widows "attach themselves" (if not physically, at least affectively) to children or, more rarely, siblings.

Males in late adolescence typically go through a period of several years when their familial ties are minimal in the extreme. Though this is consistent with the social separation of the generations, encouraged by our institutional structure relating to intergenerational mobility, the implication of this for social control is that these males are primarily oriented to age-peer groups and not to what must be called more "normal" behavioral supervision, which most societies have provided through the family.

The family, it should be noted finally, is a major and normally enduring component of the "significant others" who serve to reinforce norms earlier internalized, by exhibiting current expectations and sanctions. Where earlier socialization and the norms of the effective family differ, we encounter a variant of role conflict. We should expect such situations to result in some form of "behavioral disorder."

The claims of the family on the individual are prominently marked by affectivity, by demands on what we earlier called "troth." These claims may be made somewhat impersonal by strong institutional support, including legal principles, and thus the interest of "third parties," but reliance on such extrafamilial guides to conduct is indicative, in our society, that intrafamilial relationships are strained and in jeopardy.

The closest approximation to the family's claim on genuine loyalty is that of the *peer group*. Most of the studies dealing specifically with peer groups are concerned with coalitions of age peers among children and adolescents. In the typical case these groups are informal and multifunctional. They are also "somewhat" equalitarian (thus justifying the term "peer"), but on closer inspection they may be differentiated according to various performance standards. It is because the valued attributes or abilities within such age-peer groups often have a low or negative value among parents, school officials, or public authorities that the groups have attracted attention as factors in both attitudes and institutionally expected performance (Campbell, 1964). Within the school situation, however (which for the most part leaves out such peer groups as juvenile gangs), Lavin's (1965) review of research findings indicates very little independent effect of peer groups on academic performance at elementary-school levels. The studies on high-school and college performance yield more mixed results with respect to the particular criterion of Lavin's review, that is, academic performance. There is little basis for doubting that adolescent peer groups exert an independent influence on academic or other institutionally sanctioned behavior. But it cannot be assumed, cynically, that peer groups are uniformly antisocial in their prescribed attitudes (Lavin, 1965, pp. 134-138).

It should be noted that the peer group is not necessarily totalitarian in its claims on members, or even totalitarian with respect to spontaneous and affective allegiances as contrasted with officially sanctioned behavior. Lavin (1965, p. 138) sounds a cautionary note: "... students are often members of several peer subgroups." A comparable caution is applicable to the very large number of studies of "informal organization" in industrial settings and within other complex and highly formalized social systems. Such studies commonly assume, without examination, that an informal structure that arises in the ecological context of the workplace is multifunctional, involving, for example, voluntary work exchanges, eating together, participation in illicit betting pools, visiting local bars after working hours, or exchange of entertainment among the families. It is much more probable that such informal activities are differentiated by membership as well as by function, a point cogently discussed by Miller and Form (1964, pp. 223-287).

Spontaneity of formation and informality of interaction do not necessarily lead to multifunctional operation. Indeed, if we examine such groups in terms of their operation with some turnover of membership, we should expect that for the new recruit both spontaneity and informality are seriously impaired.

There is no need to limit the term peer group to collectivities without formal organization. Children may form clubs, complete with club names and written constitutions. Adolescents may do likewise, or join clubs and fraternities already organized. Adults may join a myriad of clubs, associations, and occupational organizations, as well as participate in durable constellations of social relationships that are without names, officers, or written rules. Multiplicity again presents problems in predicting the behavioral consequences of group identification. Indeed, the predictive matrix may have to be extended to include groups to which the individual does not belong, but to which he aspires and thus takes as a behavioral guide through "anticipatory socialization" (Merton, 1957, pp. 265-268). The useful concept of "reference group" seems most appropriate with regard to just such segments of the individual's social constellation. In Merton's very extensive and valuable discussion of group influences on behavior (Merton, 1957, pp. 225-386), the term "reference group" seems to mean any group that matters, and thus to be a redundant phrase.

Complexity plagues us once more. Where multiple options exist in the individual's life space, group identification alone may be said, in a kind of circular fashion, to be predictive of behavior. But since not all such identifications are preclusive, their implications for behavior are likely to require *both* a specification of the functional context and examination of individual attitudes or other indicators of relative salience. The social analyst's life becomes less hectic when he can find valid grounds for "overpredicting," that is, for identifying the probability of high salience of a particular group identity, and thus for predicting the influence of that group membership beyond the bare minimum evident from the group's functional position or apparent values. Thus, I have elsewhere argued that occupational identification will take precedence for workers (of any status) over competing allegiances in the work context, the alternatives being generalized status, the employer, the industry, or sector of the economy (Moore, 1960). To this view I should now add another, qualifying dimension: that the relative salience of occupational identity will be positively correlated with the prestige rating (or required training time) of the occupation. At some point along this continuum I should expect occupational identity to predict behavior beyond the limits of the work context. The occupational group would then become a peer group in the richer, multifunctional sense of the term, a sense that the realities of organizational complexity forced us partially to abandon.

The most highly ordered form of organizational membership offered in contemporary life is that of employment in a *bureaucracy* or *administrative organization*. Such organizations seem to be manifestations of role theory carried to the limiting extreme. Specialization of functions is extreme. Coordination is accomplished by elaborately planned complementarity supplemented by finely specified and graded authority. Impersonality and affective neutrality are prominent normative features. The job specifications and rules on relationships apply to offices, and not to individuals as such. The organization is thus equipped to endure extensive turnover and succession in positions, and such personnel changes are normal and frequent (Moore, 1962, pp. 21-46, 79-90). Only slight variations in these organizational features are introduced by different collective functions or missions; thus the army, the civilian govern-

mental agency, the private business corporation, the university, or the hospital differ from one another in small details. Approximation to the "ideal-typical" bureaucratic specifications is correlated with organizational size, and conversely. A particular subtype is of special interest in the present context, namely, what I should call a "custodial organization" and Goffman (1961) calls a "total institution." The particular feature of this type is that part or all of the membership is subject to continuous surveillance; the organization, for these constituents, is thus not a functionally specialized segment of their life activities, but almost the boundary of life for the duration of their membership. Residential schools find themselves in the curious company of army reservations, prisons, and mental hospitals within this organizational category.

In principle, the plan of the administrative organization answers all questions relating to organizationally relevant behavior of members. In fact, inquiry into the relation of the structure to behavior is still permissible. A number of sources of flexibility and uncertainty may be briefly noted.

1. Perfection of planning is improbable. Thus, both overlapping role specifications and failure to provide for some essential functions are likely to occur.
2. Change in relevant conditions of operation, whether of internal or external origin, will make some positions obsolete, create a need for new ones, and heighten the probability of jurisdictional conflict among continuing positions.
3. Bureaucratic organization is better fitted for placement by selectivity than by socialization, but is virtually certain to use both. Persons with the talents and training for established positions may not be available, or not available in response to the inducements actually offered. Filling higher positions by promotion—recruitment from within—is not required by the formal organizational model, but is customary. This implies at least cognitive socialization, based on "experience," but, more subtly, implies internalization of the normative expectations (role requirements) of new positions. In effect, whether the predominant emphasis is on selection or on socialization, personality variables are taken into account.
4. Organizational identification may be expected to vary among the personnel of the bureaucracy. Though some of this variance will be idiosyncratic from an organizational standpoint, it is still likely to have organizational relevance, and thus additional behavioral consequences. High identification may be given various organizational rewards, such as preference in promotions. Low identification may lead to actual severance, or to being passed by for a promotion otherwise in order. But variations in identification and its behavioral manifestations may also be partially predicted in structural terms. Commitment to the organization can be expected to be least among those who have fared least well in terms of relative position and income. It will normally be highest among those who have fared best, but especially among those who have wide coordinating (administrative) authority and responsibilities. The gradations of commitment will not exactly match the rank order of formal position. Persons in relatively high positions may still be somewhat alienated, for reasons apart from idiosyncratic ones. They may have had what appeared to them as reasonable expectations for further advancement not fulfilled and thus have experienced "relative deprivation" (Stouffer *et al.*, 1949, pp. 124–130). Another highly placed segment of organizational personnel have primarily technical rather than administrative duties. These professional and technical (staff) people will nor-

mally display a greater occupational identification—the peer group again—than commitment to a particular employer. One clear behavioral consequence, or demonstration, of this difference is the relatively high interemployer mobility of staff personnel.

5. The necessary *succession* to positions, arising from retirement and death if not from other, administrative sources of transfer, will necessarily alter actual role performance in some degree. The limits of tolerable variability must be narrow, but they must exist.

6. Finally, deviance and evasion must also be expected. Excessive performance may be as troublesome as underperformance, and is often more mischievous because it is difficult to punish. Role ranges and gaps in the perfection of organizational integration permit other demonstrations of individual resistance to narrowly constricted conformity. I have elsewhere (Moore, 1962, pp. 163–166) identified several varieties of “useful troublemakers” who may be harbored within the awesome regularity of bureaucracies. These include memory and conscience keepers, conscientious objectors, court jesters, creators, and (paradoxically) sinners—the last, on the ground that occasional violations prompt righteous reactions, without which moral lethargy may set in (Durkheim, 1933, pp. 70–110).

Again, it must be emphasized that these forms of “unexpected” behavior derive partly from the particular social system. They are not purely exemplary of the failure of organizations to guide or predict behavior, but rather indicative of the subtleties that exist within social systems themselves.

SOCIAL DIFFERENTIATION AND BEHAVIOR

It sometimes appears that nonsociologists think the most important sociological concept is that of “social class,” and that many sociologists would concur. Certainly there has been a plethora of studies of class differences in behavior, ranging from differential fertility to differential participation in voluntary associations. I shall not attempt to go beyond a brief summary of the results of these studies here; a fairly adequate summary is provided by Berelson and Steiner (1964, pp. 476–490). More attention will be given to certain methodological and theoretical issues.

Indices of class status—particularly in the American context, where most of the studies have been carried out—are positively correlated with educational performance, level of formal educational achievement (if not part of the index) (Havemann and West, 1952), relative immunity to mental disorder (Hollingshead and Redlich, 1958), participation in voluntary associations, formal rather than highly expressive religious participation (Clark, 1949), and, although less reliably, conservative voting behavior.

Through most of the western world prior to World War II, class status and size of family were negatively correlated. Since that time, class status has become a poor or negligible predictor of fertility behavior. Certain other relationships appear to be curvilinear: individuals in the upper and lower segments of status distributions appear much more likely to indulge in gambling than those in the extensive middle range, and the same parallelism of the extremes apparently applies, paradoxically, to emphasis on multigenerational and laterally extended kinship relations.

Of the multitude of studies that take "class" as an independent variable, those relating to differences in child rearing are especially interesting. There is some preponderance of evidence that (American) middle-class parents are more permissive with children than are lower-class parents. (See Caldwell, 1964, for a very extensive review of relevant research; also, Bronfenbrenner, 1958.) Yet the behavioral consequences for the children themselves are uncertain: "In the preoccupation with demonstrating that children from different social classes have different patterns of family life, research designed to demonstrate the effects on young children of these patterns has been neglected" (Caldwell, 1964, p. 81). On the other hand, Becker (1964), citing a number of studies, indicates that permissiveness in a context of affective warmth (both more probable in the "middle class") has such consequences for the children as greater activity and creativity and greater ease in taking adult roles.

We are now ready to introduce some qualifications and problems. The first relates to the concept of "class" itself. How real are the divisions into distinct strata? It is often asserted that European classes are more "real" than those of the United States, perhaps partly because intergenerational status mobility is lower, though this depends on the reading of the evidence; in any event, in Europe more than in the United States, self-identification manifests itself in distinct political identifications and even in one form or another of class conflict. In the American context, it has been customary for investigators to use some combinations of status indicators, and arbitrarily to mark off three segments of the resulting distribution as upper, middle, and lower classes. The refinement of using some multiple of three, exemplified by Warner's work (Warner and Lunt, 1941), does not change the arbitrariness of the procedure.

In American survey studies, an overwhelming proportion of respondents identify themselves as "middle class." A standard stance of interpreters has been to account for the popular "myth" by reference to the predominance of middle-class standards as ideals that secure "inappropriate" class identification. Now I strongly suggest that the respondents are approximately correct and that it is the interpreters who are attempting to perpetuate a myth. The income distribution of American families is distinctly diamond-shaped, with a wide middle, a narrow upper point, and a not very wide lower one. The distribution of educational achievements has a similar shape. To the extent that occupations can be reliably rated in terms of relative prestige—and that is easily exaggerated—the populous middle ranges are again evident. The implication of all this is that, if class is taken to be tripartite and is taken seriously as a structural feature of social life, it provides no substantial basis for differentiating the behavior of the bulk of the population, who form what Wilensky (1961) has called the "middle mass."

In view of this difficulty and the related problem of arbitrary boundaries, some scholars have abandoned the frequently meaningless charade of grouping distributions into strata, and use instead some index of "socioeconomic status" (SES) (see, for example, Lenski, 1954). Income and education almost always figure in such indexes, and the prestige rating of occupations not uncommonly. Here the methodological question needs to be raised: does the construction of a combined SES index improve prediction as compared with the use of separate components? It is widely assumed that additional variables will improve the prediction (or "account for more

of the variance") of the dependent variable. Perhaps, but the assumption warrants empirical examination. For example, education or occupation will be found to be a better predictor of family budgetary behavior or "styles of life" over rather broad ranges of income than will actual income differences. Miller and Swanson (1958) suggest that the distinction between "bureaucratic" and "entrepreneurial" occupations is more predictive of differences in child-rearing practices than are conventional "class" distinctions. Brown (1965, p. 133) concludes that "... the style of life of the family unit in this country [United States] depends chiefly on the occupation of the father." He adds: "There seems to be nothing in the prestige ratings given occupations to suggest a class structure. . . ."

Income, on the other hand, is certainly the best single indicator of savings behavior; additional predictive power could probably be added by taking note of occupational differentials (not necessarily ranked), but probably little by educational levels held independent of occupation and income. Again, simplification as a research strategy may cost too much.

The preceding cautionary note is given added point by the many forms of social differentiation not commonly included in SES or definitions of class. Family, lineage, ethnic origin, and "race" may be irrelevant in some social contexts, crucially relevant in others. Performance (NB: behavioral) criteria are often taken into account as modifications in formal status by way of addition or subtraction, and may occasionally supersede formal status. (In an evil world this seems to happen much more often as a way of losing effective status than as a way of enhancing it.)

We are in fact raising a problem that is far-reaching. The question of equality or inequality of participants is appropriate in *every* social context. Even where nominal equality is the norm, it is very likely to be shaded by evaluations of differential performance (Moore, 1963a). But the critical question for concepts of class or even generalized social status is whether these highly specific and segmental ranks can be transferred or converted into a more general currency, a kind of cumulative and amply founded status. The probability of consistency and cumulation of status in an extremely diversified social order appears low on statistical grounds, and it is improper to assume the result without empirical examination. But turn the problem around. The implications of the insistent doubt just raised would also damage the deductively predictive power of generalized class or status indicators. The high-status executive or outstanding professional may *not* be a leader in his community, an officer in his club, a vestryman in his church, to say nothing of being excellent at his hobbies, an ornament to his neighborhood, or the executive in charge of his own household. He may get no extra kudos for his family lineage, but the probabilities *are* good that he is a "Wasp" (white Anglo-Saxon Protestant) (Baltzell, 1964, Packard, 1962). Not everything is independent. On scientific, though not necessarily on policy grounds, one may be thankful for small favors.

Our tribulations are not quite over. The point of reference in the preceding paragraphs has been the multifaceted or at least multiroled individual. But we must also take into account preclusive groups. Here also we encounter social differentiation, but a reliable ranking of the groups may not be possible. We encounter Baptists and Methodists, Republicans and Democrats, Masons and Odd Fellows, Lions and Rotarians, families who acquire things and those who acquire experiences, urban dwellers and (a few) rural dwellers, Easterners and Westerners, and so on. Now by the sheer numerical distribution of such identifications in a community one may

be able to get a plurality vote in a popularity rating or a preferential scale. (Note that, despite our use of pairs, the distinctions are not commonly dichotomous.) One may even be able to link some differentials to a nominally independent status indicator such as income. But it is extremely unlikely that one could secure a *consensual* basis for any ranking, or even for the criteria to be used. Modern society, or at least American society, abounds with distinctions without a difference, if by difference is meant a reliable relative rank. More than incidentally, it is the very pluralism of American society that not only reduces the consistency of commonly used status indicators, but also reduces the relevance of so-called general status for a variety of other, optional forms of social participation. If social scientists think that this is more than slightly unfair to their search for reliable order, they may recall that it is only in such social settings that they are likely to be accorded much tolerance, or even permitted at all.

There is still another, and related, problem of interpretation. It is, in essence, whether certain segments of the "class system"—for example, the hereditary poor or various racial or ethnic minorities—are to be viewed as differential participants in a common system or as constituting "subcultures." By the latter view, such groups would essentially constitute enclaves, in a society but not of it. This is in part an empirical question, the answer to which is not clear from available evidence. Merton answers critics who suggested that his "cultural goals" were not truly common by presenting evidence that *some* portions of the alleged subcultures share the values of the dominant majority, and arguing that uniformity should not be expected and that its partial absence is not damaging (Merton, 1957, pp. 170–184). Incidentally, one does not have to be very sophisticated in psychological theory to be suspicious of oral (and perhaps real) rejection of a goal that the respondent has notably failed to achieve. This does not mean that the goal was never shared, would not be shared if the opportunity structure were different, or indeed may not be currently held in some real sense. In this case, though the evidence (to repeat) is mixed, it seems preferable to opt for simplicity. To take a simple point: income is such a crucial mechanism for transfer of goods and services in contemporary society that a genuine rejection of income aspirations cannot be interpreted as a preference for a different set of cultural values; it is simply insane.

Neither the structure of social differentiation nor the individual's place in it is immutable. Let us here attend primarily to individual change (that is, mobility), though the probability of mobility is notably affected by structural change (Moore, 1966b). Of the many kinds of mobility (geographical mobility, occupational mobility, interemployer mobility, and so on) we shall limit our brief inspection to general status changes, distinguishing only intergenerational changes and movement within a career.

The first point to be noted is that any general system of social inequality (or social stratification) tends to be self-perpetuating between generations, since the family is a primary agent of initial social placement and socialization and thus offers differential advantages to its offspring. In no society could this hereditary replication be complete, because of the reality of genetic differences and because demographic replication is extremely unlikely and in fact unknown (Moore, 1963c, pp. 12, 16). The situation in modern societies provides further sources of intergenerational mobility. For a variety of causes that include rapid technological change, changes in international politics, and the organization of deliberate change in a great variety

of social contexts, the nature and distribution of the positions to be filled are subject to major change, and mere intergenerational replication is inappropriate or impossible. Many of the sources of change on the "demand" side of the social structure also affect the "supply" side. the quest for talent that leads to the liberalization if not the equalization of educational opportunities is a major sorting and allocative mechanism.

Let there be no mistake. Parental social status is partially predictive of the aspiration levels and achievements of children. But as usual, the differences are clearest at the extremes and less easily detected in the wide middle ranges. Moreover, as long as the structural changes just noted continue, anything resembling precise inheritance of status must decline.

Educational achievement may be taken as a kind of precareer mobility, and an extremely influential one at that. Changes in the demand for talents or skills during a breadwinner's life will also affect his career chances. Though the overall trend in the occupational structure is that of upgrading, some participants do not in fact "make the grade," and for them the structural changes are depressing or disastrous. Remarkably little further is known about the interplay between structural and motivational elements in career mobility. One can be sure that chance and "connections" have some significance, and presumably demonstrated merit has some. I have elsewhere speculated on the interplay among aspirations, expectations, and achievements in administrative careers, but I had nothing but impressions to rely on (Moore, 1962, pp. 173-179). We can, however, note two additional points meriting further inquiry: What are the "coping mechanisms" for unexpected success as well as unexpected failure? What are the costs of success, not only in terms of probably increased responsibility but also in terms of life patterns and possibly relatives and friends left behind (see Tumin, 1957)? It may seem needlessly solicitous to point to the problems of the successful, but to the impartial analyst they merit attention as much as do the problems of the downtrodden.

BEHAVIOR IN TERMS OF ANALYTICAL, STATISTICAL CATEGORIES

We shall have little to say about the behavioral counterparts of social structure viewed as a statistical distribution of personal attributes or achievements. Of those who generalize or aggregate differential behavioral characteristics, one may ask for explanation in either motivational or structural terms. The two sorts of explanation should have, hopefully, some kind of relationship. Rather than run through a tedious list, let us take two examples.

Fertility behavior for a long time in the western world was, in a rather perverse way, largely determined by social status. It was perverse in that those who could best afford large families had the smallest, and conversely. The historic explanation of the inverse relation between social status and fertility can be put most reliably in terms of the differential distribution of access to knowledge about contraceptives and of mobility-oriented aspirations favorable to their use. On reexamination of the evidence, urbanization and industrialization, commonly identified structural changes, were extremely crude and unreliable predictors of fertility limitation, but educational level a rather good one. We have, then, a structural change, implemented by a partly constant and partly variable motivational constellation, which produces a significant behavioral result as displayed in statistically significant dif-

ferentials. This example may be pushed further, for the change in the inverse relationship between status and fertility can be attributed to completion of a process of structural change (Moore, 1964). A greater equalization of formal knowledge, and presumably of attitudes favorable to deliberate choice, largely wiped out the previous structural sources of differential behavior. Indeed, with increasing frequency, the relationship between social status and fertility turned positive; children were no longer conspicuous evidence of ignorance and error, but could be taken as evidence of deliberate choice and therefore comparable to other symbols of conspicuous consumption.

Incidentally, the age structure of a population, itself chiefly a consequence of past fertility trends (Coale, 1957), is a principal determinant of current birth rates, apart from all other general and differential factors.

A similar mixture of structural and motivational elements is involved in differential labor-force participation rates. For adult males, labor-force participation is normal; the exceptions are of some small interest, since some involve physiological and psychological disabilities, and others represent structural pathologies. Age-at-entrance and age-at-exit for the male worker are strongly structural (including institutional) in their determination. Female labor-force participation rates are subject to the same institutional and some of the same structural conditions as those for males. For many females, however, and particularly those who are married, labor-force participation must be regarded as essentially optional. Though such "structural" elements as educational attainments are variable, and such "motivational" elements as quest for additional income might be assumed to be inversely related to the income levels of husbands, the best single predictor of labor-force participation of mature married women is the absence of dependent small children from the household. Thus, a particular structural change in the family (a conspicuously motivated change), the early cessation of childbearing, has behavioral consequences that can be generalized as the age structure of female labor-force participation.

We have already noted, in passing, some consequences of changes in occupational structure, and similar linkages could be traced to income or residential distributions. The important point to be underscored is that a "purely structural" analysis is difficult to sustain. At times, it is much too coarse-grained. The kind of brief structural analysis used with reference to age differences in female labor-force participation will not account for many of the exceptions: the married women who enter the labor market even though they have small children, modest education, and husbands with relatively good incomes, and the married women who remain safely feminine in their social participation though they have no children in the household, are well educated, and have husbands with extremely modest incomes. Finer structural distinctions may account for part of this variance, but reliance on motivational variables is likely to prove convenient at an early point.

In other instances, structural explanations of behavior may prove highly reliable but still leave a sense of incompleteness. The analyst seeks *instrumental closure*, that is, motivational elements that may not be directly observed but are rather posited as intervening variables in order to turn a bare prediction into an "explanation." The structural explanation of statistically expressed resultants of behavior may be rather elaborate and sophisticated. Witness Davis (1949, pp. 562-586) on social factors in mortality differentials, or Davis and Blake (1956) on fertility determinants. On the other hand, the "proximate" explanations for various participation rates—college

attendance, urban migration, voting—may adduce very simple, summary structural and motivational variables. In no case is it quite possible to dispense with some kind of motivated actor.

SEQUENTIAL STRUCTURES AND BEHAVIOR

There are many situations, we have argued previously, where the structural ordering of behavior is not simply cross-sectional and allocative but involves a temporal order of expected behavior. We have glanced briefly at our extremely modest knowledge relating to careers, and commented even more briefly on the structural changes inevitably introduced by positional succession. I have elsewhere noted the universal importance of marking off major stages in a normal life cycle by public rituals, *rites de passage*. Indeed, any standardized temporal ordering of activities is a sequential social structure (Moore, 1963b). Here I should like to note only the ways in which the inevitable aging and mortality of biological man intersect with continuing social systems. (Several paragraphs in this subsection and the concluding section are adapted from Moore, 1966a)

A rather different perspective on social organization and social process results from dealing with the entire human life cycle as a necessary biological dimension of continuing social systems. Indeed, age as a kind of neutral and continuous variable, which manifests itself in both continuous and discontinuous changes in behavior, is relevant for most forms of social discourse and social structure. Our task here is to examine the interplay between this unavoidable basis for individual change and the social system that comprises the ordering of behavior according to values and norms, and allocates activities to actors in terms of positions and roles.

A society as a whole, or any continuing social organization, is perforce faced with a succession of actors or role players. Man's mortality ensures the necessity of recruitment. Ultimately, that recruitment rests on biological reproduction, but various positions require prior socialization or at least the achievement of some testable or arbitrary degree of "maturity." Typically, various social positions have some kind of age specificity, though the age grade may be rather broad and not always defined in precise chronological time: for example, infancy, childhood, youth, adulthood, and, perhaps, old age. Transition from one broad age grade to another thus entails some discontinuity in the life cycle. But it also entails replacement as individuals leave an age grade, whether they leave by "graduating," or, sooner or later, by death.

In all societies there may be considerable periods in the life cycle when aging is gradual and expected role relationships essentially constant. During these periods, cumulative experience or even physical vigor may count for little in differentiating younger and older members of the category, so that there is little sense of either progression or retrogression. This appears to be most often true of the broad age grade of adulthood, and even in a highly graded society such as our own, many of the powers and responsibilities of adults have little variability according to either exact chronological age or social seniority in the position.

Yet the succession problem remains. And for any social role, that is, any role beyond the passive one of the newborn infant, there are two interacting sources of variability among recruits: (1) biological competence and aptitudes and (2) differences in exact socialization experience. To date, the first source of variability is less subject to deliberate control than the second, but neither ensures a comfortable fit

between systemic demands for sequential positions and the available qualities of successors. From a demographic viewpoint, the magnitude of the succession problem depends on the way age-specific mortality rates intersect with the age-grading characteristic of a society and its various subsystems.

Let us assume, probably correctly, that age-specific mortality actually has the greatest relevance for succession and accompanying structural change where many people move through a somewhat graded career (as is primarily the situation in modernized societies). Let us also assume that the structure is more or less adapted to relatively stable or slowly changing mortality conditions within and among the various age grades. Then we should expect the greatest structural dislocation to be caused by sharp changes in mortality conditions. As a concrete illustration, substantial war losses among young men in military service leave gaps in the "recruitment cohorts" for subsequent civilian employment, improve the competitive career chances of the survivors and those just younger, and incidentally damage the marital chances of their female contemporaries. Conversely, to take a hypothetical situation, a substantial reduction of mortality rates of men over, say, 50 years of age would impair the promotional prospects of younger men and postpone the demise of persons in lifetime positions.

The adjustment problems of aging clearly are not confined to persons in retirement. The age grading of achievement, even if loose, presents adjustment problems throughout adulthood, particularly for regular members of the labor force. Keeping up with, falling behind, or forging ahead of one's age peers provides a constant or periodically recurrent opportunity for comparison.

Though we have been examining the demographic flow of recruits to social positions relative to age, we must bear in mind that sequential patterns have prominent normative elements. The social significance of age and aging is rather variable in time and space. Various systems set minimum and maximum ages for types of social participation: labor-market entry, marriage, voting, holding office, or (later in the cycle) compulsory retirement. Other rights and privileges or termination of a particular social participation are made functions of time rather than age as such: years of qualifying experience, terms of office, length and thus seniority of service. When coupled with age minima, these temporal patterns may be viewed as a further aspect of succession.

It is a commonplace that different social systems place different values on various stages of the life cycle and allocate different privileges and responsibilities to the older ages. Yet, whether most individuals experience a gradual and steady rise in relative position as they age until the time that they die or become unmistakably senile, or go through an ascent and descent only partially parallel to their physiological capacities, the age curve of social participation is irretrievably cyclical because of man's mortality.

ORDER AND CHANGE

It seems unfortunately necessary to remind anyone who is still a party to this communication that our topic is "social structure and behavior." We have traversed a lot of thorny terrain concerning social structures and their complexity, much of our journey being an attempt to differentiate and bring a measure of order out of a

welter of social phenomena. We have been at some pains to specify the ways individuals fit, or fail to fit, the constituted, valued, and sanctioned expectations of various social structures, viewed as ways of capturing and allocating human activity. We have just completed a brief look at individuals moving through this complex environment rather than simply fitted to it. There remains the necessary task of allowing the environment to change, the ground to move under the feet of our somewhat hapless protagonists.

First, let us turn once more to individuals "moving through" a social system. But now we shall permit a further element of inescapable reality to enter: the system itself does not stay in a steady state. We shall examine briefly four typical cases of the interplay between aging individuals and social systems.

1. Let us initially consider the situation, typical of so called traditional societies, where most structural changes are relatively minor and aggregate change relatively slow. In these circumstances the view of the individual "passing through" a system is approximately accurate. The individual in the course of his life may essentially replicate the lives of his predecessors. And since generations properly go by lineages and cannot be applied cross-sectionally to entire populations, all ages coexist. Thus, even in the improbable event of very fine age grading, prior role models are constantly at hand. The inevitable slippage in training between true generations may thus be partially offset by the existence of "collateral intermediaries" who serve to smooth out the generational gap. In view of the universality of radical structural changes, the frequency with which this situation occurs in the contemporary world should not be exaggerated, but it has some interest as a kind of limiting case with extensive historical importance.

2. If structural change is somewhat more rapid, the adaptable individual may be able to keep current, the microcosm in effect replicating the macrocosm. The individual, in the course of aging, adds experience at about the same pace at which events are taking place. For example, an artisan or other technically trained producer may be able to "keep up" with developments as they are introduced by the aggregate of practitioners.

3. A third situation is one widely prevalent in newly modernizing societies. Structural change may be so rapid and so radical that it is essentially discontinuous with precedent. Here both the innovators and the adherents are likely to be young, with role models that are doctrinal and borrowed from other social systems. The aging person has no role models consistent with prior experience and values, and may be unable to adjust to novel arrangements. Indeed, he commonly suffers loss of authority, for he is no longer the exemplar and instructor for his children or others who traditionally might have emulated him. He becomes a pathetic figure, treated with indifference or contempt by the young revolutionaries.

4. A fourth situation is that of contemporary modernized societies, including the United States. With extremely rapid change, the pace of collective experience becomes too rapid for the individual to keep current. He falls behind. Generational succession gives way to dependence on a steady supply of new entrants to the labor force, bringing fresh skills and capacities for creative adjustment, but the young innovators are quickly threatened in their turn. Again, if we take the example of the person technically trained, his rate of accumulation of experience is far less

rapid than the rate of innovation by the aggregate of experts. He may be able to protect himself by specialization. He may be able to restrict access to his specialty, enforce employment security through seniority or tenure provisions, or become an administrator because he is no longer technically competent. He may, however, become plainly obsolete, and require a period of retraining if he is going to continue a productive career.

Certainly the most radical structural change in terms of role demands affecting very large numbers of people is represented by our third situation, that of societies undergoing rapid modernization. Here the emphasis on resistance to change, alleged by anthropologists and sociologists for structural reasons (with implicit motivational counterparts) and by psychologists in terms of early socialization and attitude formation, has proved to be wrong in the gross, however accurate in subtle details. All these members of the learned gentry underestimate the importance of perceived differences in elemental quests for sustenance, health, and longevity (Moore, 1965a). Yet it remains true that recruits to novel forms of social organization are at least partly reluctant, and get involved with the extensive structural matrix associated with modernization in varying degrees and in varying ways (Moore and Feldman, 1960, pp. 1-77). Still, close examination of the widespread phenomenon of deliberate modernization reconfirms an important structural principle and an important behavioral principle. The structural principle is that functionally differentiated parts of a society—the economy, the polity, the urban community, specialized associations, the family—do have a necessary congruence and interdependence. For the modernized sector of a developing country, all stand in sharp contrast to traditional modes of organization, and they form a kind of misshapen package untidily but firmly tied together. The behavioral principle is a comforting counterpart to the structural one. It is extremely difficult for the new adult recruit to join the system partially and selectively. Experience is reinforcing and requires an extensive adult resocialization.

When we get appropriately (but somewhat preciously) precise about the structuring of individual behavior by something called social structure, doubts and uncertainties abound. When we deal with more massive, but cruder, relationships, a theoretical order once more serves to organize volatile and unstable behavioral phenomena. The morals here are many, but surely, by now, they need not be written down.

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Cultural Psychology: Comparative Studies of Human Behavior

GEORGE A. DE VOS, *University of California, Berkeley*

ARTHUR A. HIPPLER, *University of Alaska*

Anthropology, as a specialized discipline within social science, has developed around the ordering concept of culture as a distinguishing feature of human societies within the animal kingdom. The first focus of this new comparative and historical science of man at the end of the nineteenth century was the central problem of human evolution. Although this problem has not been given up completely as a field of legitimate inquiry by anthropologists (see Hallowell, 1963), by the middle of the twentieth century the ordering concept of culture or cultural patterning has been thoroughly reconsidered and reformulated. Present-day approaches to culture are most often concerned with the influence of culture on the structure and function of comparatively viewed societies. The concept of culture is also used as a means of understanding the influence of different social environments on psychological structures. A distinct theoretical orientation variously called by anthropologists "personality and culture," "psychological anthropology," or "cultural psychology" has evolved around a dual theoretical framework applied to the study of human behavior as determined both by cultural and by personality variables.

WORKING DEFINITIONS OF "CULTURE" AND "PERSONALITY" IN CULTURE

The anthropologist's definition of "culture" is somewhat more encompassing than the definition of social structure commonly used in sociology. Kroeber and Kluckhohn (1952), for example, formulate the concept of culture as follows (p. 181):

Culture consists of patterns, explicit and implicit, of and for behavior, acquired and transmitted by symbols constituting the distinctive achievement of human

groups, including their embodiment in artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other as conditioning elements of future action.

The term "personality" used in the context of culture is as broad in scope as the word culture—the same behavior viewed as a part of culture can also be considered in terms of a psychological structure deriving from man's biological and physiological potentials and limitations. Personality "structures" are learned patterns dependent on a cultural environment, but they are no more reducible to analysis only in cultural terms than cultural patterns are reducible to psychological patterns. The meanings operative in language patterns or the organized patterns of behavior revealing psychological traits are configurational in nature and cannot be derived from an elementistic or reductionist breakdown into parts.

Gardner Murphy (1947) suggests that personality be viewed as a theoretical construct containing three levels of complexity; it may be seen as an individual, as a structured whole, or as a field consisting of organism and environment. However, personality also includes the dimension of culture. Psychological mechanisms continually interpenetrate and are modified and developed by the continual interchange with the social and natural environment. Thus, theories of personality organization are never totally separable from theories of social organization. One cannot develop a valid theory of personality independent of sociological considerations. In studying particular forms of human behavior in culture, we are studying a particularized region of continual interaction in comparative contexts, defined as variant cultures. In the following review we limit our concern primarily to statements of theory and reports of research using the anthropological concern with culture as a significant determinant of human behavior.

Even though the scientific methods adapted for cross-cultural research on psychological mechanisms have in almost all instances been developed within psychology or psychiatry rather than by anthropologists, the anthropological contribution to this interpenetration has become considerable, since it has fallen to the lot of anthropologists to insist on the necessity of systematically examining all human behavior within the context of cultural determinants as necessarily controlled variables (*cf.* Gottschalk, Kluckhohn, and Angell, 1945; F. Kluckhohn, 1940; Malinowski, 1935; Mead, 1947a; Rivers, 1914; Whiting and Child, 1953; Whiting and Whiting, 1960). As will be discussed in the various sections of this chapter, the universality of conclusions based on psychological research conducted within Western culture has received severe challenge from comparative anthropological data.

The present chapter is organized around a presentation of what we consider to be six major problem areas that have motivated both the earlier investigators and present-day workers in the field. These are (1) the influence of culture on physical and motor development; (2) the cross-cultural evidence regarding cognition, perception, and logical thought, or the influence of race or culture on the information-processing mechanisms in personality systems; (3) the nature of symbolic thought and expression, related to cultural behavior and the expressive components of culture, including myths, beliefs, dreams, and ritual practices; (4) the influence of culturally determined child-rearing practices, role expectations, and values on intellectual and emotional development, as well as on the general socialization of the individual; (5)

problems of social change and innovation in society as related to personality; and (6) problems of mental health, conformity, and deviancy as influenced by the cultural environment.

THE INFLUENCE OF CULTURE ON MOTOR BEHAVIOR AND PHYSIOLOGY

No student of human behavior today seriously considers the theory that motor behavior in its differing forms among differing cultures is hereditarily determined. Yet almost any individual who has come into contact with another cultural group more than his own has experienced the sensation that the "foreigners'" ways of gesturing or even moving are somehow unnatural. For example, one of the first experiences of the foreigner to Japan is to learn that what in America is seen as spontaneous reference to the location of the self by pointing to the breast seems curious to the Japanese, who puts his finger on his nose when talking about "I." It is only very recently that the custom of symbolizing formal acceptance of acquaintanceship or friendship by a handshake has become widespread throughout the world. In many cultures, such direct physical contact would, in the past, have been considered unseemly. For example, George Spindler (1955) graphically demonstrates how the Menomini point with their lips, considering pointing with the fingers to be too aggressive.

A variety of authors give accounts of characteristic patterns of motor behavior strikingly different from one culture to the next (*cf.* Hall, 1963); for example, Belo (1935), Bailey (1942), and Devereux (1951a) give such information for the Balinese, Navaho, and Mohave, respectively. One of the most intensive studies of gestures and how they change within one generation under the influence of acculturation is that of Efron (1941). His study details how hand and shoulder gestures accompany language in both Italian and Eastern European Jewish immigrants to New York. When some acculturated individuals speak Yiddish, they use traditional gestures, but do not do so when speaking English. Efron demonstrates that there are systematic patterns in the spatial direction taken by the gestures. The southern Italians' gestures are more lateral and open, whereas those of Eastern European Jews are frontally oriented and turned inward. Thus, while gestures themselves are universal, as LaBarre (1947a) has noted in an extensive review of differences in the symbolic meaning of gestures throughout the world, there is wide variety in the meaning of culturally patterned motor expressive behavior.

CULTURAL PATTERNS IN THE SOCIALIZATION OF SEXUAL EXPRESSION

Cross-cultural research on differences in sexual behavior is of considerable interest from the standpoint of understanding just what is "natural" and "unnatural" in sexual behavior. The widespread evidence of the presence in particular groups of what is considered deviant sexual behavior, such as sexual union with animals or homosexuality, as well as highly varying forms of heterosexual behavior, indicates quite common propensities in mankind toward behavior which, at least in some cultures, has been deemed highly unnatural and contrary to innate human drives. For example, cultures vary to the extent that autoeroticism is tolerated, from its extreme acceptance in Truk (Gladwin and Sarason, 1953, p. 115) to the denial of its existence. Few societies are found which fail to report any instance of homosexuality (Gladwin and Sarason, 1953; Goldfrank, 1951; Lessa and Spiegelman, 1954). In one society

which has been studied, the male practice of homosexuality at some stage of development is reported to be almost universal (Wirz, 1925). The nature and form taken by homosexual practices is highly variable (Ford and Beach, 1951). In addition, the relative incidence of homosexuality can change with changes in social structure, as is documented by Kardiner and Linton's analysis of the general cultural change of the Tanala and Batsilo with the change from dry to wet rice agriculture (Kardiner, 1939).

Sexual satisfaction itself is not simply a physiological process; drive reduction requires psychological satisfaction as well. In no human culture is the nature of sexual behavior found to be reducible simply to mechanical physiological expression. Prior social experience in each instance seems to impart important social or psychological meaning to the sexual act. As noted in recent animal studies (Harlow, 1962, 1963, 1964), satisfactory physiological sexual functioning in adult monkeys requires some form of adequate prior mothering and peer-group social experiences during infancy. Such comparative studies with subhuman groups will throw more light on various theories of human psychosexual development (see pp. 359-365). Impotence and frigidity, for example, appear to be markedly influenced by cultural training and cultural attitude (Ford, 1945; Ford and Beach, 1951). J. Henry (1949) suggests that impotence and frigidity are relatively rare among people who tolerate some form of childhood sexuality.

Klineberg (1935) points out that the forms of marriage prevalent in a given community may bring about interesting differences in the psychological reactions of the persons concerned. In our own society, which has idealized romantic love, a girl would be horrified at the thought of being bought and paid for by her suitor. Where marriage by purchase is the custom, a girl can be proud of the price she brings. The Kaffir despises a wife taken "for love," that is, without payment. A Yokut girl would not consent to go to a husband until he had paid the bride price. Jealousy over exclusive sexual rights to a woman is by no means universal, nor is the degree of commitment to a single mate, which varies widely from culture to culture. The habit of wife lending, as part of the entertainment of guests, is not limited to the Eskimos. Spencer and Gillen (1899), for example, note that wife lending is habitual among the Australian Arunta, and that any manifestation of jealousy is extremely rare. Among the Kirgiz, as reported by Lowie (1920), it is not unusual for a woman to ask her husband to get a second wife to share the work with her.

Even what is sexually attractive varies cross-culturally. Concepts of modesty in reference to the human body vary from the heavy sanctions imposed on physical exposure, demanding complete coverage of the body and veiling of the face, among the North African Arabs (Miner and DeVos, 1960) and the Tuareg (R. F. Murphy, 1964) to the complete nudity found prevalent in indigenous groups both in South America (for example, the Mundurucu; R. F. Murphy, 1960) and in Australia (for example, the Murngin; Warner, 1937a). Also, attitudes toward size and bodily build are part of the self concept of a people when they come into contact with other groups. For example, the Japanese self-evaluation of their physical characteristics—attitudes toward skin color and shape of eye—has recently been heavily influenced by sustained contact with Europeans (Wagatsuma, 1966). In different cultures one finds a continuous selectivity in concepts of beauty that directs individuals toward types of gestures and methods of behavior which are positively evaluated, and away from behavior which is considered reprehensible or disallowed. As Mead (1947b) suggests, ideals of physical beauty have probably influenced selective mating throughout time.

The steatopygia found in the African Hottentots is an extreme example of selective breeding toward a desired physical trait having survival value, as is the phenomenon of large jaws among Eskimo women.

The appearance of sexual behavior during the prepuberal period, sometimes termed the latency period, is apparently culturally determined (Devereux, 1951b; Hartmann, Kris, and Loewenstein, 1951). It appears to be absent in some cultures (Devereux, 1951b). Hartmann, Kris, and Loewenstein (1951) note that Freud (1920) had clearly expected this, contrary to social-science folklore. One may, in fact, agree with Devereux (1951b, p. 90) when he says that it is not the absence but the occurrence of the latency period that stands in need of cultural as well as physiological explanation, as Bateson (1947) also suggests.

Culture may also influence sexual behavior through the patterns of celibacy and ceremonial continence. As Coon (1950) notes, there are cultural practices which increase or decrease female and male fertility.

The cultural modification of sexual behavior is, of course, possible only because of the evolution of the neocortex. In lower mammals copulatory behavior is controlled by mechanisms below the cortex and thus is not altered by experience. In primates the neocortex controls such behavior in part. Thus, human beings are capable of a variety of "sexual" expression, since sexual behavior is in large part learned and not innate in humans (Beach, 1958).

EMERGENCY REACTIONS AND THE NERVOUS SYSTEM: RAGE, AGGRESSION, AND ANXIETY

The direct expression of rage reactions completely free of some form of socialization is extremely rare. Nevertheless, experience with cortical stimulation of rage centers in cats and primates suggests that some such reaction must also be physiologically possible for human beings. Every society has its structure and patterns for the expression of aggression. Freud's dictum that raw drives such as sex or rage cannot be expressed without some cultural clothing does seem borne out by cultural data, at least as interpreted through eyewitness reports. In fact, there may be reason to believe that the physiological basis for the cultural expression of the "innate drives" is deeper than we have suspected. There has been recent interdisciplinary discussion on some of the relationships between subhuman cultural expressions and the underlying neurophysiological substrates of such behavior, and certain hypotheses have been proposed by ethologists for the evolutionary development of structured emotional behavior in human species.

Such innate drives as sex and aggression become interpenetrated and confused one for the other not only among humans, but also among subhuman primates. MacLean (1963) suggests a neurophysiological reason for this. Since the amygdala of the limbic cortex of the mammalian brain is involved in self-preservation (eating, defense, etc.) and next to it is a system seemingly involved in species maintenance (sex behavior and the expressive and feeling states conducive to sociability and other preliminaries to copulation and reproduction), the excitation in one area "spills over," as it were, into the other. This, MacLean suggests, is the basic structural physiological reason for the relationships between sexual and oral functions in the unconscious and also in the conscious mind. Thus, fear, aggression, sexuality, and orality can be stimulated in areas of the brain quite close to one another. Some support for this

hypothesis is offered by Ploog and MacLean (1963), who note that penile erection in *Saimiri sciureus* is used both for courtship and to express physical dominance over other males. MacLean (1963) suggests that this is important in light of the fact that, in some birds and fishes, sexual and aggressive behavior are indistinguishable.

The implications of such hypotheses for human behavior are immense. It is possible that the great variety of sexual and aggressive behaviors elicited by various cultures is due to the fact that all these behaviors are latent or exist "in potential" as part of man's neurochemical makeup. MacLean (1963) also suggests that the precultural roots of altruism may lie in the close connection of feeding, sustaining, and sexuality. A concern for the preservation of the species is based on sexuality. The primate mother may often find that while feeding her child her genital region and that of the child become tumescent. Certain types of unconscious adult configurational "confusion" may occur because (as noted above) neighboring areas of excitation in the brain are apt to diffuse into one another, and because the young infant is not socialized to the point of making as discrete discriminations as will be possible later (see pp. 345-359 and 375-389).

As recent physiological discoveries have helped to underscore the importance of the possible neurophysiological substrates of human behavior, research by primatologists in the field of physical anthropology is beginning to contribute considerably to an understanding of the social nature of aggression or conflict behavior. Washburn (1965), for example, in essential agreement with Collias (1944) and the ethologists Scott (1962) and Wynne-Edwards (1962, 1965), suggests that in many species, including primates, group order is maintained by hierarchical organization and between-group space is divided by habit and periodic conflict. The aggressive individual is an essential actor within the social system, and group competition seems necessary for delimiting the distribution of the species and the control of local populations. Washburn feels this territorial behavior in primates has been underestimated for a variety of reasons. For example, since groups remain normally spaced apart, the observer sees only the results of avoidance, not its causes. Even so, there have been studies showing great intergroup conflict among rhesus monkeys in India. Although agonistic gestures and bluffing are very important in terms of maintaining dominance position and in terms of intergroup hostility, the ultimate importance is the ability to fight. Scott (1962) suggests that such fighting among male animals has adaptive significance in that the strongest, most aggressive males mate more often (also noted by Collias, 1944). Scott also suggests that aggressive behavior is greatly increased by being rewarded.

Washburn (1965) suggests that one of the functions of language in humans can be the reduction of agonistic gestures and direct interpersonal conflict, thus limiting aggression. Hall (1964), in discussing the relationship of language to personal interaction, suggests the overriding importance of "adumbration" in communication, which he defines as the nonlinguistic signals men use to define the situations in which interaction can take place. Such signaling prevents fighting behavior. Hall relates this notion, in terms of the evolution of human behavior, to recent research on the relationship of biochemistry to environments; in this research, population control is seen as a function of a system of interdependent, interlocking servomechanisms.

Others have suggested much the same. Tinbergen (1954) and Eibl-Eibesfeldt (1961), in research on sea gulls and sea lizards respectively, note the importance of the sequences of display behavior, which, by a patterned interaction through feed-

back mechanisms, gradually allows the individual animals to become accustomed to each other and thus peaceable. Interrupting this sequence seems always to lead to strong antagonistic behavior. Hall (1964) relates these observations on animals to probably inherited psychophysiological behavioral substrates in man. But physiological potential can be modified even among subhuman primates. While it is true that male monkeys have powerful teeth, necks, and jaws, the complex of behavior that is utilized in fighting seems to be learned in games and childhood. In this context, Spitz (1963) notes that the ontogenesis of the expression of emotions, and especially their proleptic aspect, is a function of the nature of the child's object relations as much as of the unfolding of an inherited anlage.

The importance of socialization in culture is inescapable. Whereas the customs and values important to the adult world are clear to the child in a simple society, this is not so in a complex one. The customs and values that are learned in aggressive game behavior may become completely disruptive, given modern adult values, on the one hand, and the technology of destruction, on the other. Washburn speculates that the long-term evolution of the species, facilitated by aggression earlier, is now threatened by forms of aggressive behavior which have become dysfunctional. He quotes Scott (1958) to the effect that the human actor is quite dominance-seeking and too aggressive (behavior which is often still rewarded in play and encouraged by antiquated customs). As we noted above, moreover, men are constrained internally, having evolved in small societies, to feel strongly about small groups. Since it is emotions that move men to action, the basis for social emotions that proved adequate among small bands of hunter-gatherers is completely inadequate for the complex interpersonal societies of today.

While recent physiological investigations have shown the basis of emotional behavior, and primate studies suggest the relationship of certain types of behavior to social group needs and the evolution of man, the fact is that the expression of aggressive or tender emotions and their associated behavior varies widely from culture to culture. In fact, just what behavior is appropriately associated with the seemingly basic emotions varies widely. We have noted a tentative explanation for this in gross terms in our brief glance at neurophysiology and neurotopology associated with certain emotions and behavior.

In human cultures, aggression in terms of warfare against outgroups has been an extremely common phenomenon. It is rather clear that aggressive, warlike behavior is not systematically related to any particular race or physical type, but is widespread throughout all the continents and climates where man is found. However, the institutionalization of warfare may be more quickly brought about by some cultural change. For example, Grinnell (1923) reports that the Cheyenne, who became a very warlike Indian tribe, may have entered into warlike aggressive patterns only after the introduction of the horse.

There are various forms of institutionalized modes of verbal aggression. Many of these serve as substitutes for the expression of more drastic forms of physical violence. The Eskimo Drum Dance (Sumner, Keller, and Davie, 1927) is a most graphic example of displacement of aggressive and destructive feelings. Another ritualized form of quarrel is that of the Indians of Santa Mata in Colombia (Sumner, Keller, and Davie, 1927), who are characteristically peaceful and carry no arms. When there is a severe grievance between two of them they go to a rock or large tree, each carrying a stick. Thereupon, they strike at the tree or rock, uttering a multitude of

insulting words until one of them cracks or breaks his stick. This person is accredited the victory. They are then supposed to return home, renewing their broken friendship by social drinking.

A similar example in Saulteaux society is reported by Hallowell (1953), who shows in his analysis how aggression is socialized in Saulteaux society. He shows how defensive structures in personality are utilized to prevent the appearance of overt aggression so that, to all appearances, the Algonquin Woodland Indians manifest none of the behavior found in either the Iroquois or the Sioux. The ritualizing of aggression in potlatch by the Kwakiutl Indians of the northwest coast is another dramatic example of the socialization of pent-up antagonistic feelings. The potlatch is a ceremony in which one destroys one's own property as a means of gaining ascendancy over another (Boas, 1925). Klineberg (1935, p. 268) summarizes:

Conflict may be inevitable, but culture determines its mode of expression. Whether an individual fights with satire, or with property, or with his fists will be decided by the traditions and customs of his group.

THE INFLUENCE OF CULTURE ON RATES AND PATTERNS OF PHYSIOLOGICAL DEVELOPMENT

Whereas there is a general consensus that motor behavior in the internal viscera and skeletal muscle tonus can be culturally conditioned, the evidence of cultural influence on the internal growth processes in the body is more open to controversy. So far, research on this question has been, at best, exploratory.

The most obvious possible cultural influence on physiological growth processes is that of cultural traditions in diet. However, other cultural-environmental influences may also be at work. The striking discoveries of Boas (1912) concerning changes in the bodily form, especially the cranial configuration, of immigrant Jews and Italians in New York City, and in the width of the face in immigrant Bohemians, are not surprising to modern physiologists and ethologists, who are elaborating systematic studies not only of the effects of diet but also of the effects of group size and crowding on bodily size and proportions in animal groups (Wynne-Edwards, 1962). Boas argued that some concept of physiological plasticity in response to environmental conditions other than diet, such as urban versus rural living, must be superimposed on the study of genetic transmission. Whereas he demonstrated generational differences statistically, he wisely added, "no statistics will tell us what may be the disturbing elements in intra-uterine or later growth that result in changes of form" (1940, p. 179).

More recently, Landauer and Whiting (1964), in a controversial paper, have found a significant relationship between some form of intense sensory stimulation at early childhood and greater eventual adult stature. When found in particular cultures, such stimulation as magical or cosmetic piercing of the nose, lips, or ears, circumcision, inoculation, scarification or cauterization, molding or stretching of arms or legs, shaping of the head, the experience of extreme heat or cold, or the administration of internal stresses such as emetics, irritants, or enemas, is associated with adult individuals who are on the average taller than those coming from cultures in which no such stimulation occurs. The authors are aware of the possibility of contaminating variables in these correlational findings. Nevertheless, intraspecies variability under changed conditions has been produced in laboratory mammals, most often through some kind of effect on the endocrine control of growth.

It must be pointed out here, too, that Landauer and Whiting (1964) did not find any index of diet that correlated in their group with differences in adult stature. They pointed out that, in Tanner's (1962) review of the literature linking diet with stature, there was a frequently observed positive correlation between stature and socioeconomic class in complex societies, and this correlation is usually attributed to diet; however, they argue that the relationship may be far more complex, since there are many consistent differences other than diet that distinguish the upper from the lower classes, such as less crowded living conditions and even, perhaps, the nature of infantile stimulation.

Even differences in physical development may be culturally influenced. Mead and MacGregor (1957) point out that in American children there is a common developmental sequence from crawling to walking which does not occur in Balinese culture. They describe also how body tonus differs greatly between Balinese and American children. What is described by American psychologists as the normal sequence may be less universal than is usually thought. Dennis (1940), for example, concluded, in his investigation of the Hopi, Navaho, and Rio Grande Indian children, that culture was the chief factor in the slower development of walking ability of these groups when compared to American whites.

Tests such as the Gesell-Ilg (a test of physiological development whose use Mead, 1947b, encouraged) have been applied to Negro and white samples in the United States with differing results. Curti *et al.* (1935) found that the scores of Jamaican children on Gesell tests were equal or nearly equal to the scores of white children in New Haven, despite the difference in physical development related to diet and other factors which disadvantaged the Jamaican samples. In contrast, Williams and Scott (1953) found significant differences in gross motor development between two groups of Negro infants from sharply contrasting socioeconomic backgrounds. The infants from the low socioeconomic group showed significantly greater gross motor acceleration than did those from the higher socioeconomic group. Differences in motor development were found to be related to methods of child care, with infants from permissive, accepting environments scoring significantly higher on the Gesell developmental schedules than infants from rigid, rejecting environments. Finally, Williams and Scott suggested that motor acceleration is not a "racial characteristic."

Knobloch and Pasamanick (1958) decided, on the basis of the findings after developmental evaluation of motor behavior in 992 infants born in Baltimore in 1952, that few major conclusions can be drawn (p. 132):

Contrary to all previous reports, including our own, there are no significant Negro-white differences. A number of possible explanations related to changes in child rearing suggest themselves. The most obvious statement which can be made, however, is that previous differences could not be attributed to innate racial characteristics.

It is apparent that, in the past two decades, motor behavior in all children has been significantly accelerated over the findings in the 1920's and 1930's. This might tentatively be attributed to changes in the direction of more permissiveness in child rearing and/or bettering of health status. The mean developmental quotient for infants born in 1952 is above the norms originally established in the 1930's; this is also true for language and social behavior.

The psychiatrist Marcelle Geber (1958a, 1958b), working with the Ganda of Kampala in Uganda, discovered remarkable comparative rates of physical maturation among African infants, and documented them with films graphically demonstrating the physiological precocity of neonate Gandans. Geber is herself somewhat at a loss to explain the reason for this seeming precocity, whereby nine-hour-old infants are able to keep their heads from falling back when drawn into a sitting position, while in European children this phenomenon does not appear until about six weeks after birth. She attributes it to intense preparations of the mother during pregnancy, and the complete focus of the mother on the oncoming birth of the child and its care subsequent to birth. The mother seems to sense, by some form of immediate communication from the child, a readiness of the child to defecate or urinate, and is able quickly to bring the child to a proper place for this activity. In similar fashion, the mother anticipates the child's desire to nurse, and there is very little evidence of crying. Whatever its cause, the physiological, motor, and psychological precocity of these children disappears abruptly after the experience of weaning, when the child is sent away to a grandmother for a month at a time. No preparation is made for the mother's abrupt disappearance from the child's world. Geber likens the reaction that she notices in these children to a period of mourning from which the rural tribal Gandan child never recovers.

The degree to which types of stress culturally induced in the mother influence the subsequent physiological development of the infant and its internal chemical balance has yet remained unexplored on a cross-cultural basis. That culturally differentiated appearances of stress phenomena might have an influence on the mother during the period of pregnancy has been suggested by some studies conducted on rats with stimulations of various kinds.

Perhaps the most interesting cultural phenomenon related to physiological reactions is that of thanatomania (Honigsmann, 1954). Thanatomania is defined anthropologically as a death resultant from a belief in magic. In this type of situation, the victim seemingly wastes away and dies, even when given competent medical care. Instances of such deaths have been recorded in South America, Africa, and Oceania (Warner, 1937b; Webster, 1948). Warner (1937a) noted a personally witnessed instance of this phenomenon in an Australian tribe. He suggested that the behavior of the friends and relatives of the victim of sorcery and magic strongly reinforce the victim's own strong convictions of his impending death. People around him, assuming that the man's fate is sealed, respond and interact with the man as if he were dead. He weakens under the multiple impact of social stress, his own suggestibility, self-induced starvation, and the obvious preparations made to bury the victim.

Warner's suggestions are in line with W. B. Cannon's (1942) hypothesis that profound physiological consequences result from intense fear. There is an inability to eat or drink under such a state of extreme panic. However, this is an insufficient explanation for the phenomenon, since there are some reported manic deaths which have occurred too swiftly for deprivation of food to have had an important role. Such deaths have, in a few instances, actually been observed in clinical and hospital situations (*cf.* Simmons and Wolff, 1954).

This area of the interrelationship of physiological, individual-psychological, and patterned-cultural factors promises to be one of the most exciting for future studies in human behavior.

PERCEPTION, COGNITION, AND LOGICAL THOUGHT:
THE INFORMATION-PROCESSING MECHANISMS IN PERSONALITY SYSTEMS

In the following section we shall consider various cross-cultural approaches to the study of perception, cognition, language, and thought. Most social scientists today believe that, cultural differences aside, *Homo sapiens* is an animal capable of language and internal symbolic processes and of the highest forms of reasoning or abstract thought, perception, and cognition. Of course, some subtle differences in the gene distribution determining the incidence of sensory incapacity, such as color blindness or lack of sensitivity to particular tastes, have been established (Garn, 1961). Physical anthropologists and other scientists have also studied the relative incidence of particular blood groupings in different parts of the world (Garn, 1961). But no population has been found systematically lacking in a particular sensory or perceptual capacity. No one to date has attempted to demonstrate that a particular group is totally lacking in a capacity for abstract thought, though there were several impressionistic suggestions of this in the earlier anthropological literature. Indeed, the more thoroughly an anthropologist is acquainted with a particular culture, the less apt he seems to be to voice such an impression.

It must be noted that almost all the studies cited in the following sections find no absolute differences between groups. What they usually reveal are significant differential incidences of a trait, that is to say, inferred effects of group membership on the individual on either a biological or an environmental basis, rather than the total presence or absence of a trait in a particular population. Many of the studies we quote do not concern themselves with ingroup range or variability; instead, they limit themselves to a discussion of the significant differences between groups. The uncritical reader of such studies may take away the impression that all members of a particular primitive group, for example, are characteristically animistic in their thinking processes, whereas Western man is characterized by his capacity for mature reasoning in problem solving. We suggest that the evidence does not support this interpretation.

STUDIES IN PRIMARY PERCEPTION AND COGNITION

The Torres Straits expedition (1901) in which the psychologists A. C. Haddon, Charles Myers, and William McDougall participated, and the subsequent study of the Toda conducted by Rivers (1906), stand out so clearly as early landmarks in cross-cultural psychological research simply because they were not followed up by any controlled research by other psychologists. These studies did much to dispel the general notion prevalent at the time that primitive peoples inherited unusual sensory gifts, whereas they were innately inferior in capacity for abstract thought. Myers (Haddon, Myers, and McDougall, 1901), for example, found that the general auditory acuity of Murray Islanders was inferior to that of Europeans, but he attributed this inferiority to possible pathological conditions resulting from diving deep into the sea for shells. Myers noted the extreme variability among individual subjects and suggested that primitive natives were no more amenable to stereotyping than were members of more evolved cultures (1901, p. 220).

Segall, Campbell, and Herskovits (1963), at a much later date, reported their own results of a comparison of susceptibility to the Müller-Lyer and other illusions in

15 societies, most of them from Africa. They were able to demonstrate a substantial intersocietal difference on two types of susceptibility to geometric illusions. Systematic differences in response patterns suggested the existence of different habits of perceptual inference relating to cultural and ecological factors in the visual environment. Thus, they proposed that differential susceptibility to illusions of perception results from cultural expectations in translating automatically what is perceived on a two-dimensional surface into its three-dimensional counterpart. They pointed out that the representation of three-dimensional objects on a two-dimensional surface involves an arbitrariness which is similar to that found in linguistic conventions.

Price-Williams (1967) cites a number of articles that reached conclusions similar to those arrived at by Segall, Campbell, and Herskovits (1963). In one of these, Allport and Pettigrew (1957) reported on the testing of Zulu subjects with a trapezoidal window illusion. The illusion is produced by a revolving figure cut in the form of a trapezoid, to which are affixed horizontal and vertical bars giving it the appearance of a conventional window; it is then attached to a motor so that it can revolve on its axis. The illusion produced is that the trapezoidal figure oscillates backward and forward. As an explanation of this phenomenon, it has been suggested that the observer brings to the figure certain expectations based on familiarity with rectangular shapes and particularly with conventional European-style windows. The conflict in the observer between his expectations and the shape of the figure gives an impression of sway or oscillation. An unacculturated Zulu group, with little or no experience of urban South African life, failed to report the usual illusion.

Sellers (1941) reported on the showing of a movie to unacculturated Nigerians. A vertical pan shot of a building conveyed to the audience the impression that the building was sinking into the ground. Sellers considered that his audience focused their eyes flat onto the screen and did not attempt to see stereoscopically. While this point, as Price-Williams notes, was made on the basis of good observational inquiry, support for it has come in formal experiments as well.

These findings argue strongly for the importance of experience and instruction as factors in depth perception, as do those of Bartlett (1932). Submitting a North American Indian folktale to his Cambridge (England) undergraduates, Bartlett found that, when these students were asked to repeat the story as it had been told to them, their different cultural background produced distortions in the narrative sequence which conformed to their interests and expectations. S. F. Nadel (1937) attempted a follow-up of the Bartlett experiment in Nigeria. Nadel used two tribes, the Yoruba and the Nupe. In this case the prevailing art styles of the two tribes were the culturally differentiating factors. Yoruba art and drama have a highly developed imagery and emphasize qualities of meaning, whereas Nupe art concentrates more on spatial and symmetrical arrangements. Nadel found that the two tribes diverged according to the expectations hypothesized on the basis of their material culture. The responses of the one group were more oriented toward meaning; of the other, toward spatial arrangements.

Perhaps the most well-known examples of how cultural experiences as well as psychological needs shape the perception of ambiguous material are found in the extensive work with the Rorschach test in various societies. Thompson (1951), for example, demonstrated how she found distinctive tribal perception patterns, which she interpreted as related to three levels of perceptual maturation. Joseph and Murray (1951) found that two tribes living on the island of Saipan maintained dis-

tinctive perceptual patterns; and Bryce Boyer, a psychoanalyst, reported in a personal communication that he had found systematic differences between Chiricahua and Mescalero Apaches in their basic perceptual approach to the Rorschach. DeVos (1954), in a systematic study of acculturation of Japanese-Americans, found that the modal approach to Rorschach perception changed dramatically in one generation: among the immigrant generation (the Issei), he found patterns characteristic of the Japanese in Japan, while among the American-born and American-educated Nisei the patterns were very similar to those of a normative American sample. Whatever interpretations are made of the particular psychodynamics involved in differential perceptual organization, the Rorschach provides clear evidence that the modalities of perceptual organization vary considerably from culture to culture.

RECENT THEORETICAL ORIENTATIONS TO COGNITION

There has recently been an interest in cross-disciplinary studies of cognition. The study of cognition in anthropology has been reflected in psychology in extensive investigations of learning sets, concept formation, problem solving, and the effects of culture on problem-solving capacity (Hunt, 1961). Cognitive mapping studies in anthropology, utilizing techniques borrowed from linguistics, have been undertaken to determine how a person understands his own culture. Fischer (1961), using both psychoanalytic and linguistic approaches, has studied art styles as cultural cognitive maps, basing his investigations on the theory that man projects his society in his art. Jacobs (1959) has also attempted a cognitive analysis using psychoanalytic theory.

Segall, Campbell, and Herskovits (1963), as mentioned earlier, have analyzed differences in perception of geometric illusions in terms of cultural differences and habits of perceptual inference. Hall (1956) studied cross-cultural approaches to time, basing his investigations on the theory that the study of the microelements of culture is the most productive means of understanding cognitive functioning. Roberts, Sutton-Smith, and Kendon (1963) have shown parallels between games children play and the preferred method of competition in adult society. They suggest that cognitive orientations toward fate and chance are reflected in expressive behavior such as that found in games. Games may also be seen as training situations for developing the cognitive orientations demanded by members of the society. Another approach to the problem has been that of Birdwhistell (1960), who related cognitive structuring in the form of communication to kinesic behavior.

Psychoanalysts and psychologists are also attempting to integrate the cognitive and affective components of personality. Rubinfine (1961), Klein (1959), and Rapaport (1951) are only a few. Rubinfine (1961), for example, suggests that symbolic thinking must be thought of as a continuum extending from full consciousness to bare consciousness and characterized by a movement from verbal to pictorial symbolism. This suggests that the symbolic activity of dreams and that of speech share an ego-controlled component. In attempting to integrate psychoanalytic theory with cognitive theory, Rubinfine quotes Piaget (1954) to the effect that the prevalence of anatomical material in symbolism is related to the complete egocentrism characteristic of the baby's consciousness. He equates infantile consciousness with that of the sleeping adult. Kohut and Seitz (1963), discussing changes in psychoanalytic theory, note that psychoanalysts now see a large part of the ego or reality-integrating systems as unconscious. This is, of course, parallel, though in a different context,

to the implicit suggestions by Frake (1962), Pike (1954), and Conklin (1962) of an unconscious patterning of ego activities in culture. Another discussion of perception and cognitive activity as they relate to ego development can be found in Sandler, Dauntton, and Schnurmann (1957).

Anthony F. C. Wallace, in a series of articles and books (1961a, 1961b, 1962), suggests that the direction now being taken in studies of personality in culture indicates an increasing awareness of the cognitive aspects of culture. He has proposed his "mazeway" theory as a possible approach. Wallace assumes that individual cognitive systems do not have to be identical in a given culture for it to operate, so long as the content of the various mazes is predictable and relatively equivalent. He goes so far as to propose that the psychic unity of mankind arises from this (semantic) capacity to predict the content of the various mazes. In the controversy over whether different personality types must be present in a society for different aspects of it to function, or whether it is not so much the personality as the equivalence of expectations that permits a society to function adequately, Wallace would take the latter view. Wallace suggests, in fact, that statistical studies of personality in culture are apt to ignore the different ways in which men interact with different personalities.

From a somewhat unusual theoretical standpoint, Berlyne (1962) proposed the need to see cognitive drives (such as the drive to reduce cognitive conflict) as innate. He suggested that the new directions in motivation theory came from stimulus-response theory, such as that first developed by Hull (1943). In Berlyne's terms, we might, for example, see esthetics as a form of exploratory behavior, since it has both formal and collative factors. Esthetic organization depends in great part on collating information from past and present events. Fischer (1965), in an analysis of Berlyne's approach, suggested that the universal tendency to think associatively in metaphor and simile might be innate to cognitive structuring; in support of this position, he quoted Lévi-Strauss (1962) on totemism. Finally, Festinger's (1962) concept of cognitive dissonance has a rich potential for cross-cultural investigation. Festinger hypothesized that, if an individual's cognitions are not psychologically consistent, he will try in various ways to make them conceptually and cognitively more consistent. Cognitive dissonance, he suggested, can be a motivator and may continually affect one's perception and evaluation of incoming information. One might also suggest developing an analogous concept of affective dissonance to help explain some universal strictures on social behavior (see pp. 345-348 below).

The social origins of conceptual categories

The influence of language on thought. One of the first anthropological researchers to point out the inadequacy of evolutionary theory in explaining differences between languages was Franz Boas (1911a, 1911b). He suggested that, instead of ordering languages on the basis of the relative primitiveness or development of their structures, anthropologists should be thoroughly trained in functional linguistics in order to help them understand how natives think. He suggested that the syntax of language might be considered "the cognitive unconscious," since most people are unaware of the syntactical structure of the language they speak. Thus, systems of thought could be uncovered without reference to evolutionary stages in language morphology.

The most influential of the pioneers in linguistic analysis in anthropology was Edward Sapir, who was instrumental in stimulating a general interest in a dynamic

approach to personality. Within the field of linguistics he developed a theoretical approach (1929) which was followed by several others, notably Whorf (1940). His followers established a general theoretical position which became known as the "Sapir-Whorf hypothesis," opposing the previous interest in the evolutionary theory of language-thought development. It postulated that the cultural cognitive systems of the so-called more "advanced" societies were not necessarily conceptually more sophisticated than those of primitive groups. Thereby, it took a culturally relativistic position which emphasized the complexity of language patterns found within some of the most technologically simple cultures.

Some linguists espousing this position took an extreme position on the relationship of thought and language, stating that language is so much a determining aspect of culture that it invariably determines thought content. Consequently, one may conclude that thinking processes within particular cultures are determined solely by the limitations of language vocabulary and syntactic structure. Most linguists today believe that this position is not scientifically tenable; nevertheless, they continue to espouse the idea of a very strong influence of language on thought processes. French (1963) and Brown (1958), for example, have recently proposed that those segments of experience that are more readily codable in a language may also be more readily available to those speaking the language.

Another linguistic approach to patterns of behavior is that of Wright (1954) and French (1956), and later Frake (1962), who applied by analogy the so-called "emic" and "etic" units of analysis used in modern linguistics to the forms taken by culture. The "emic" approach is an analysis of culture through the actual thought processes discernible from within the culture itself. In contrast, in the etic approach the analyst imposes his own theoretical distinctions on the cultural phenomenon he is examining. The emic approach focuses on content and inherent meaning as experienced by the participants in the culture, whereas the etic approach is more concerned with general structural patterns to be found in the culture. Thus, linguists, using the emic approach, have become interested in cognition studies as a means of investigating the various levels of subjective psychological "meaning" to be found in culture. For example, Pike (1954) even suggests that all of human cultural behavior is patterned in a manner similar to that suggested by Boas (1911a) for language.

Componential analysis. Ward Goodenough (1956, 1957) coined the term "componential analysis" to describe a new technique developed within linguistics which, according to its adherents, could be applied to other aspects of culture as well. By using this system of formal semantic analysis, one supposedly uncovered the native speaker's own cognitive processes. Goodenough also suggested that by analyzing the components of meaning in native terms one could arrive at a more valid comprehension of a total culture in terms of the cognitive structure found within individual members.

This formulation has stimulated others involved in linguistic analysis to attempt to understand culture in terms of the "new ethnography." The exponents of this point of view are interested in the ideational components of culture rather than behavioral sequences or material traits (see Hammel, 1965, and Sturtevant, 1964, for a more detailed history of this movement).

Interest in the potential of "componential analysis" received a major impetus with the publication of a volume edited by Thomas Gladwin and William Sturtevant

(1962). In it they compiled a number of papers by linguists, including Conklin, Frake, and Hymes, who in various ways called attention to the need for anthropologists to get at what might be termed the native categories of thought. A number of investigators have begun to work along these lines. French (1956), for example, investigated the native categories of thought in Wasco ethnoscience in order to find out how the Wascos divided up the universe. Frake (1962) reported a native categorization of biological objects such as trees, plants, etc., in the Philippines to demonstrate this unique approach.

However, this approach has not been without controversy. Wallace and Atkins (1960) note that there are two main streams of thought in componential analysis. According to one (exemplified by Goodenough, 1956), componential analysis should yield the psychological reality of the classificatory procedures of the users. According to the other, only the structural reality is uncovered (for example, see Romney and Epling, 1958). Burling (1964), in an article critical of the claims made for componential analysis, suggests that there is a sizable "hocus pocus" component in the attitude expressed by some investigators that by this method one can really get at the way people think. Burling's position is that psychological equivalence between language forms and actual thought is not demonstrable. He suggests that the most one can demonstrate is that one has a system which somehow seems to give results equivalent to those of the "native users," but one never can know that this is actually the way in which the native users think. Wallace (1965) more recently suggests that componential analysis actually can get at the "intentional meaning" of the native users, though (he admits) this is difficult. He acknowledges that this opinion is shared by a steadily decreasing number of anthropologists (see Burling, 1964; Hymes, 1962).

The principal concern in this approach tends to be "ethno-cognitive," thus leaving aside the more basic problem of "ethno-logic" operative in semantic interchanges. The cultural differences one finds in folklore or projective-test TAT protocols, for instance, have less to do with specific language structure than with the emotional logic that threads together characteristic sequences in given stories. In spite of the enthusiastic predictions for the future contribution of so-called componential analysis, the best that the present authors can say of such a linguistic approach is that, at present, as Hymes (1962) dispassionately notes, it remains an undemonstrated possibility.

CROSS-CULTURAL STUDIES OF COMPLEX THOUGHT PROCESSES

The Piaget method applied cross-culturally

One can trace in the early works of Piaget the influence of Lévy-Bruhl's beliefs about the cognitive processes of primitive man, beliefs which led Piaget to attempt an empirical testing of the theories of progressive stages of thought in children. In *The Child's Conception of Physical Causality* (1930), Piaget pays particular attention to forms of "animism," and also to what he perceives to be the quality of "participation" thinking, in children.

Piaget, throughout his earlier series of works on moral judgment in children (1932), animism (1929), and concrete versus abstract thinking (1952), has given impetus to cross-cultural studies concerning these ideas. He proposed that the child in early stages of development is unable to think abstractly. Having an undeveloped capacity for thought, the child utilizes animistic thinking and tends to vitalize inanimate objects. In a confusion of moral and mechanical laws, the child at some stage of develop-

ment believes that punishments inhere in concrete objects immanently, and that wrongs are sometimes ameliorated not through some particular supernatural agency but by the mechanical intervention of things themselves.

Noting Piaget's belief that animistic thought might remain more prevalent in primitive cultures than in modern adults, some researchers have attempted to test this theory cross-culturally. Margaret Mead (1932), one of the earliest investigators in this area, was extremely critical of Piaget's belief that animistic thought was part of an innate sequence in maturational development. Mead saw cultural differences as very important in maturational sequences. Her studies in Manus convinced her that there was no animistic thought in the children of the Manus Islands. Unfortunately, from the standpoint of comparability, she used somewhat older children than Piaget's theory would allow. In addition, she stated that she would attribute the lack of animism in the children she observed to a lack of metaphors and similes in the language of the Manus, an environment which demanded reality testing on pain of death, and the lack of communication of supernatural lore from adults to children. Piaget, however, was discussing early maturational stages as well as culturally learned behavior, and the absence of animistic thought in Manus adults is not relevant to whether or not animism appears and then possibly disappears in a maturational sequence in younger children.

A series of studies by Russell (1940, 1942), Russell and Dennis (1939, 1940), and Dennis (1943) on Zuni, Hopi, and American white children yielded what seemed to be significant results. High animistic responses were elicited from Zuni children when asked whether particular things were dead or alive. Dennis's study of the Hopi produced the same results and led him to postulate the cross-cultural existence of animistic thought in the maturation sequence of all children. Russell's studies yielded essentially similar findings. He discovered that, whether the questions were answered orally or in writing, animistic thought was produced in the same amount. He did note that the scatter obtained was greater than Piaget suggested; however, the stages of animistic thought did in fact exist without any effects due to social, economic, or sex differences that were discernible in his study.

Havighurst and Neugarten (1955), as part of a long-term cross-cultural study of children begun in the 1940's but only published in 1955, compared Hopi, Navaho, and Midwestern United States children with regard to ideas about immanent justice and animism and found among the Hopi, at any rate, that animistic thought declined at a slower rate than among American whites. There were, however, some methodological problems. For example, the Hopi value work and undervalue aggression; they believe in an external moral power. Thus, a cultural factor may have contaminated responses supposedly only concerned with the developmental sequence stages.

There are indeed extensive methodological difficulties in this approach. Klingensmith (1953) discovered that the percentage of animistic responses could be inflated by a factor of ten, depending on the objects chosen. Clocks and candles were seen as alive much more readily than dishes and combs. Brunswik (1956) also found that the selection and systematic sampling of objects can alter the results of testing. Jahoda (1958b), in Ghana, attempted to replicate the Havighurst and Neugarten study. He discovered a much lower incidence of animistic thinking among West Africans than was reported for American Indians. He suspected that the tests given were not comparable, administrative factors were different, and/or the language

used or the personal character of the administrator of the tests was substantially different. He seemed reluctant to propose cultural differences as causative even though Accra, where he gave the tests, was the capital of Ghana and thus relatively Westernized, and possibly its inhabitants were much more sophisticated in Western terms. In another article Jahoda (1958a) presented a general criticism of cross-cultural research in this area. He concluded that, developmentally, animism or ideas of participation may be universal, but that generalizations as to moral obligation found in language (for example) are culturally bound and useless. He does not believe that there are fixed ages at which animism appears in all children.

Loves (1957) made a study of Belgian Congo missionary boys similar to Havighurst and Neugarten's (1955) examination of belief in "immanent justice" (misfortune following bad behavior) in American Indian children. He found a progressive decrease in immanent justice and an increase in attribution of justice to God. Obviously, a process of Christian acculturation was involved in these results. Jahoda (1958c) himself tested the hypothesis that belief in immanent justice would prevail among primitives for a longer period of time than among nonprimitives in West Africa. He discovered in his own work that, if caution were not exercised, the type of scoring used could vastly inflate the results in favor of continued belief in immanent justice. He found that, with increased age, ideas of immanent justice declined, whereas belief in God increased. Naturalistic causality made its appearance only in older children, but did not fully displace concepts of immanent justice.

Various opinions have been expressed on the absence or presence of abstract thinking among primitives. For example, Carothers (1953), with no particularly relevant evidence, claimed that African natives are not capable of abstraction. Maisuriaux (1955) suggested that, while qualitatively the same, the minds of Africans develop more slowly than those of Europeans. Price-Williams (1961, 1962), however, pointed out that even the most simple societies have very detailed abstract social categories of kinship, property law, etc., which demand abstractions of a fairly high order. In his own controlled empirical work he found no significant differences in the development from concrete to abstract thinking among the Tiv of Africa and the French Swiss, whom Piaget had tested. Price-Williams averred that, if differences are found, the important question is the nature of the relevant socialization experiences. He also suggested that abstraction is a matter of attitude and motivation as well as process.

One of the most promising advances in this direction is the comparative study, by Bruner, Olver, and Greenfield (1966) and Greenfield and Bruner (in press), of cognitive growth in rural and urban samples of Senegalese Wolof differentiated by age and education. They found that patterns of thought and characteristically immature cognitive development persisted into adulthood in a good percentage of the uneducated population, whereas even a minimal exposure to education or urban life tended to reduce greatly the incidence of this kind of thinking. In a complex critique of Piaget's basic theory, they suggested that there are basic differences in "realism" related to the degree to which a society provides comfort and sustenance, which reinforce underlying feelings of omnipotence in the child. Such feelings either do not exist or at least are not reinforced in a child brought up in a collectively oriented subsistence society such as the Wolof, almost always concerned with starvation. The members of such a society are little inclined to invest their environment with

dynamic forces. Thus, Bruner and his associates claimed that "animism" does not develop strongly where there is little support for individual orientation. They concluded that some forms of egocentrism do not develop in a collectively oriented society. In making this critique, they distinguished between egocentrism which relates things to oneself and that which cannot distinguish the possibility of different points of view. The latter develops in the collective society, whereas the former tends to appear in industrial societies.

Bruner and his associates also noted that failure to achieve uniformity in perception of quantity is influenced by attitude toward authority. If one is willing to accept a statement as true because someone in authority has said it, other criteria for truth are slower in developing. These differences in thought patterns may have very provoking possibilities for the study of political and social organization, and may be useful in studying the developmental patterns taken by emerging African societies. In any event, more research in this area is certainly necessary.

Rorschach test findings on thought processes

The Rorschach test, since it purports to elicit characteristic thought processes and relative degree of ego strength, should, if used in controlled comparisons, make possible some further evidence of cross-cultural variations in thought processes. It would be especially interesting to study the relative incidence of the appearance of prelogical or autistic thought patterns among groups. Detailed systematic comparisons of this nature have not yet been undertaken.

Published reports on a number of cultures suggest high cross-cultural variability in the degree to which primary process thought may intrude into thought processes. The successful mediation of a well-disciplined, reality-oriented ego structure is characteristically lacking in samples obtained from certain cultures (Bleuler and Bleuler, 1935; DuBois, 1944; Gladwin and Sarason, 1953; Miner and DeVos, 1960). Obsessive sexual preoccupation (Gladwin and Sarason, 1953), diffuse anxiety (DuBois, 1944), and paranoid projection (Bleuler and Bleuler, 1935; DeVos and Helm, 1965; Miner and DeVos, 1960) are so characteristic of particular groups that one can assume that there is modally present a serious interference with the capacity for reasoned thought when the individuals are emotionally aroused. Records for some cultures show a continuously adequate level of reality testing, but at the cost of a rigid, constrictive control over thought patterns (Billig, Gillin, and Davidson, 1947; DeVos, 1955; Hallowell, 1955).

Unfortunately, insufficient comparative work has been done to establish conclusions concerning such differences. Caution must be exercised in coming to conclusions on the basis of one sample taken from a particular culture. Pathological findings obtained in one small sample cannot be directly related to cultural regularities or modalities in every instance. To illustrate, DeVos and Helm have analyzed Rorschach and TAT material taken from two neighboring Athabaskan Indian settlements in northern Canada sharing the same culture, one among the Slavey (Helm, DeVos, and Carterette, 1960) and the other among the Dogrib (DeVos and Helm, 1965). In the Dogrib sample there appeared much more evidence of inadequate reality testing and poor intellectual functioning in a sufficient number of records to characterize the group as generally functioning on a poor level of adaptation to their

environment. One must attribute such sampling differences to primary family patterns of a hereditary or functional nature, continuous for one subgroup of a culture but not necessarily true for the culture generally.

There are a number of reasons for the neglect of more systematic use of the Rorschach cross-culturally in the analysis of thought processes. Cross-cultural analysis of thought processes by means of the Rorschach has generally been limited to statements based on those aspects of the record scored in accordance with standard scoring procedures (Beck, 1946; Klopfer *et al.*, 1954). Anthropologists lacking in clinical experience in which qualitative interpretation of primary process thinking is a necessary adjunct to diagnosis are ill-equipped to do the type of inquiry necessary when unusual thought content arises. Therefore, they usually resort to an attempt to make more "rational" or comprehensible any perceptions that they receive. Sometimes their desire to do this is so great that they fail to perceive or pursue what is in the mind of the subjects. It is difficult at times, even for an experienced psychologist, to conduct an inquiry with a nonrational or autistic subject in such a way as to elicit sufficient evidence to be sure of what thought processes are involved in the responses of the subject. Prelogical thought is difficult to analyze or classify in any way. David Rapaport (1946), in his detailed study of prelogical thought found in Rorschach test samples, attests to the difficulty of systematic classification (*cf.* Phillips and Smith, 1953; Schafer, 1954).

Though material obtained from Rorschach records in different cultures may reflect types of primary process thinking by some individuals, the presence of such thinking does not necessarily exclude such individuals from meaningful social interaction within their own group. In some societies such individuals may continue functioning without visible signs of stress within a traditional setting, though they would not, perhaps, be able to meet the challenges arising from new situations demanding controlled logical thought processes (see pp. 375-378). Such manifestly acceptable though limited social functioning is found in American schizophrenic patients in remission who are not challenged beyond their means in a benign environment (Beck, 1946).

Other tests of abstract thinking

Price-Williams (1962), summarizing cross-cultural research on abstract and concrete thinking, pointed out that most studies have used tests with objects derived from Western culture. In his own work he compared bush native children and school-children in Africa with regard to their ability to classify and sort models of animals found in the area and actual specimens of local plants. To do this he lived among them, learned their language, and elicited their native categories using an anthropological interview technique. He studied their ability to shift from one classification to another and investigated the basis of the classification. In the groups with which he worked, he discovered no differences between the rural and urban children in their ability to abstract in the sense of shifting from class to class. Both groups conformed to the expected transitional stages in the maturation of thought outlined by Piaget. Price-Williams also brought up questions of differential motivation and noted that one must distinguish between process and attitude.

There is one overriding problem in cognitive research. If a given behavior can be said to be a product of socialization and reality testing in terms of the cultural

imperatives, and yet be said to be regressive in certain other respects, a new theoretical framework is needed to distinguish the various interpenetrations of structural immaturity in ego functioning and the culturally available modalities of cognition related to causal beliefs and problem solving.

CROSS-CULTURAL STUDIES OF INTELLIGENCE

Psychology since Binet and Simon (1908, 1916) has attempted to define more precisely the operational concept of intelligence, so as to use it to differentiate among children and adults and to predict their occupational and scholastic functioning. There has been sufficient research to verify the satisfactory, if not definitive, predictive power of intelligence tests within modern Western cultures, in Japan (Kodama and Shinagawa, 1953; Suzuki, 1948; Tanaka, 1936, 1954), and in literate segments of Indian culture where standardized adaptations of the major intelligence tests have been constructed. Whatever their demonstrated value in predicting scholastic and occupational success, there still remains a lack of consensus among psychologists as to what intelligence tests measure.

Cross-cultural studies of intelligence have not been too helpful in this regard, since the use of standardized tests with content derived from Western middle-class culture precludes true comparability of studies. In most recent research reports, one notes an increasing awareness of cultural factors but an inability to construct tests which will surmount the difficulties posed by cultural experience. Yet the tests do differentiate consistently among individuals within minority groups and subcultures, in the direction of predicting greater success in modernizing cultures in adaptation to formal learning and to highly evaluated occupations. Systematic population discrepancies in the results of intelligence tests adapted for use with school populations in India, China, and Japan point either to inherent differences between populations or, as is more likely, to profound influences of early culturally determined environmental experiences on the exercise of faculties comprising the intellectual parameters of personality measured on intelligence tests.

There has been a relatively large number of studies of school-age Indian, Negro, and white subjects in the United States. These studies, with few exceptions, show poorer results for children of non-European parentage. Children with Japanese or Chinese background, however, do markedly better than other non-European minority groups.

Most studies of Indian children were done before 1930. Some of these articles now seem extremely naive concerning cultural influences. More recently, Rohrer (1942), in a study using the Goodenough and the Otis IQ tests, found no difference between 235 part- or full-blooded Osage Indians attending elementary schools in Oklahoma and the white student population at the same schools. It must be noted that the Osage Indians are a group who became economically well-off as a result of finding oil on their reservation.

Carney and Trowbridge (1962) found that the Fox Indians on the Tama reservation in Iowa showed changes in IQ measurements with age: the older children, on the California Test of Mental Maturity, regressed toward the normative means with age progression. However, on the Goodenough Draw-a-Man test they not only remained superior but their degree of superiority increased. It should be noted that their culture stresses work in arts and crafts from a very early age.

Dennis (1960) found that cultural factors were extremely important in the scores obtained on the Goodenough scale by illiterate Bedouins living in the Syrian desert. Carlson and Henderson (1950) reported generally inferior IQ scores, showing deterioration as well as initially lower IQ scores, for Mexican-American children taken from particular sections of Los Angeles. Though they discussed important variables which may account for the considerable inferiority of the Mexican group as contrasted with controls from the same areas, they were criticized by Pasamanick (1951) for attempting an invalid comparison between whites and Mexicans living in the same neighborhood.

The latest, and perhaps the most judicious, interpretations of the vast amount of testing done on Negroes and whites in the United States are those by Dreger and Miller (1960), Kennedy, Van De Riet, and White (1963), and Klineberg (1963). The most detailed survey is that of Shuey (1958). Summarizing all available studies, she found the median IQ for Negroes tested throughout the United States to be in the neighborhood of 85. This represents a 10- to 15-percent difference between Negroes and whites, disregarding class, occupational, and socio-environmental differences.

Dreger and Miller (1960) found caste to be a significant variable, having as striking an impact as social class and economic variables. DeVos and Wagatsuma (1966) surveyed differential intelligence test results in Japan between the majority Japanese population and former untouchable outcastes, who comprise two percent of the present-day Japanese population (*cf.* Mahara, 1961; Nomura, 1956; Tojo, 1960a, 1960b). Legally integrated in schools, they nevertheless live in ghettos and face economic and social discrimination, including informal but nevertheless rigid taboos on intermarriage. Results for the outcastes are directly comparable to those reported for Negro Americans. In one study with the Tanaka-Binet test (Tojo, 1960a), for example, 37 percent of the outcaste group in a nonsegregated school had IQ scores below 75. Only 2.6 percent had scores in the superior range (above 125), compared with 23.3 percent of the majority group. The Japanese outcastes are not racially different from the majority population; nevertheless, a racist mythology of innate inferiority is used to justify their segregated treatment. Without external stigmata to identify them, they nevertheless suffer, as do the American Negroes, from the inner "mark of oppression" (Kardiner and Ovesey, 1951).

Klineberg (1963) expresses generally the belief of the authors when he concludes that there is no scientifically valid evidence for the view that ethnic groups differ in innate abilities. This is not to say, Klineberg points out, that there are no ethnic differences in the distribution of innate as well as socialized abilities. He also states, for purposes of argument concerning the practical implications of evidence, that, even if there is later substantiation of some average differences in the distribution of particular talents or abilities, the range of variability found within groups leads to a complete overlap ranging from defective to superior, whatever the skewness of the distribution. So far as political or social decisions are concerned, there can never be any justification for the use of averages for judgment of the individual. Moreover, IQ tests measure personality variables which cannot be isolated, such as the capacity to sustain oneself in pursuance of a task, or the degree of socialized motivation toward abstract thinking or interest in intellectual pursuits. Such variables are internalized as part of the cultural, not biological, heritage.

THE ANALYSIS OF SYMBOLIC EXPRESSIVE BEHAVIOR IN CULTURE

It has often been noted that symbolic communication in man involves more than mutual conscious comprehension. Durkheim (1947), in his concept of collective representations, alluded to the social functions of institutionalized forms of symbolic behavior that, while expressive of group solidarity, may be used in a totally unconscious manner by group participants.

What is termed symbolic analysis by either the sociologically or the psychologically oriented social scientist is usually not simply language analysis but also includes beliefs, folklore, dreams, and religious rituals, which are sometimes inadvertently described as a by-product of language. The social scientist uses such expressive forms of cultural behavior to understand either the mechanisms of social structure or personality structure, or their interaction as determinants of human behavior.

DeVos (1961) outlined various sociological and psychological functions of symbolic communication, stressing the necessity of taking a dual orientation to expressive symbolism. To a sociologist, expressive behavior is a reflection of some aspect of the structuring of human relationships within a culture. From a psychological point of view, it is a "projection," or outward expression, of inner psychological states. This latter, psychological consideration is the essential assumption unifying the analysis of folklore, dreams, etc., and controlled experiments using projective psychological tests.

The present consideration of symbolic expressive behavior in culture is divided into five subtopics: (1) studies examining the determinants of culturally defined sexual prohibitions and taboos; (2) studies of sacred beliefs and rituals as dramatic motor or verbal expressions in culture; (3) studies concerned with secular expressive traditions in culture, broadly termed folklore, related to dramatic motor behavior, verbal traditions, and plastic art forms; (4) analysis of spontaneous dreams as culturally pertinent symbolic behavior; and (5) the use of projective psychological techniques in eliciting expressive behavior cross-culturally.

EXPRESSIVE MOTIVATIONS FOUND IN CULTURAL PROHIBITIONS ON SEX

From the standpoint of social structural analysis, transcultural phenomena related to sexual behavior, such as the widespread occurrence of initiation rites, taboos against menstruating women, and most important, the universal appearance of some form of incest taboo, are usually treated as dissimilar phenomena necessitating separate study. From a psychodynamic perspective, however, there are reasons for considering such phenomena together, as has been done since the time of Freud's *Totem and Taboo* (1919).

Freud viewed the difficulties in resolving the so-called Oedipus complex as the central developmental problem in the internalization of cultural prohibitions which helped shape the evolution of cultures in *Homo sapiens*. He saw in the development of an oedipal crisis in human maturation a process which has given rise to various cultural restrictions as well as positive values. This formulation was an evolutionary theoretical extension of his discovery that an unresolved Oedipus complex was a central problem in many forms of individual neurosis that had resulted from the internalization of inflexible superego directives.

The first empirically based questioning of the universality of an oedipal-conflict stage in psychosexual development was initiated by Malinowski (1923, 1927, 1929), using evidence gathered from folklore, myths, and dreams in the matrilineal culture of the Trobriand Islanders. Malinowski sought to refute the existence of unconscious antagonism to the father and desire for the mother on the part of the son by showing that cultural and sociostructural factors helped determine basic antagonisms and desires.

Geza Roheim (1941, 1952), on the basis of material gathered from the nearby Normanby Islands (also a matrilineal culture), sought to counter Malinowski's contentions. Jones (1929), also on logical theoretical grounds, tended to discount the specific determining influence of kinship and family that Malinowski suggested. Moreover, Malinowski had no psychoanalytic training and was thus not really equipped to discuss unconscious expressive materials. In more recent years, the "neo-Freudians," for example, Erich Fromm (1941), have shifted toward viewing cultural environmental determinants as fostering or as determining whether an oedipal conflict typically occurs. Fromm views oedipal conflict as a result of childhood experience with particular forms of authority within the primary family. Certain cultures, according to Fromm, produce a series of developmental experiences which lead characteristically to a large number of unresolved tensions, both sexual and aggressive, that must seek expression through cultural forms.

Some anthropologists have found the traditional orthodox Freudian interpretation useful in interpreting cultural material; however, psychoanalysts have been further refining these concepts. Melanie Klein (1957) and others (for example, Money-Kyrle, 1957) have suggested that particular types of cultural symbolism can be traced to earlier, preoedipal stages of development, centering more on the primary mother-child relationship. They see a strong oral component in body-destruction fantasies embedded in cultural materials, which overshadows questions of sexual rivalry between father and son.

In a recent work, entitled "Is the Oedipus Complex Universal?" Ann Parsons (1964) supports a somewhat more relativistic position concerning the centrality of the Oedipus complex. She suggests another type of general nuclear complex which she sees as a circum-Mediterranean primary family configuration, conforming to neither the classical patriarchal Freudian picture nor that described by Malinowski. While one cannot agree that her formulation is a uniquely different prototype of family configuration, her cogent, consistently detailed delineation of how circum-Mediterranean children experience their parents or other adults points to a need for other studies to spell out the interrelation of cultural peculiarities and universal patterns.

Perhaps one of the most provocative recent cross-cultural studies of cultural variations in the apparently universal occurrence of the Oedipus complex in taboos and prohibitions is found in Stephens (1962). He set about to test systematically the relationship of menstrual taboos and other forms of inferred sexual anxiety in particular cultures to social structural components which determine primary family experiences. Using the Human Relations Area Files and Peabody Museum catalogs, he investigated the correlative presence of a whole series of phenomena such as post-partum sex taboos, initiation rites, sexual superstitions, sorcery, etc. He discovered a quite remarkable general correlation which suggests a more intense form of oedipal conflict in polygynous societies than in monogamous ones.

A number of studies seek to explain the appearance of sexual taboos on the basis of social structured analyses without reference to psychological mechanisms. Many of these explanations sound somewhat teleological and suggest a tendency to reify some supraindividual cultural entity. For example, Murdock, in his standard analysis of social structure (1949, pp. 260–283), attempted to explain incest taboos as guarding against the possible deleterious effects of inbreeding and as serving the need within any viable structure to minimize disruptive forms of sexual competition. Cohen (1964, p. 160) argued against this, noting that most social scientists hold a view that there is no biological or physical base for incest taboo. He suggested in its place a theory concerning the human need for boundary maintenance mechanisms which are inherent and serve to prevent overstimulation of the yet undeveloped weak egos of children.

The most subtle form of social structural approach to the subject is taken by Talcott Parsons (1958, 1964). In a brief paper (1954) he gave explicit recognition to a necessary combination of sociological and psychological considerations in any complete explanation. Whereas his exposition of the social structural elements is more cogent than some of the other published formulations, his extension of his discussion into the psychological dimension again does not provide satisfaction that the question has come close to being answered.

Space does not permit a discussion of Parsons' rather involved social structural analysis. However, in a psychological context, he accepts Freud's broadened definition of eroticism as explaining the nature of affective ties within the primary family. In the early developmental stages, eroticism is not limited to genital gratification. Diffuse, not easily resolved attachments are built up at the same time toward the disciplining agents of socialization and toward those providing forms of need gratification. Parsons notes that erotic gratification is a particularly sensitive source of conditioning in the Pavlovian sense. Thus, if the socializing agent were the sole source of a particular gratification, the omission of such gratification would make the child lose interest in the object. The socializing agent is in a position to frustrate the child, but to be effective he or she must not lose control of the child; hence, affective gratification without sexual seduction is necessary. Parsons notes that it is important that the mother as the socializing agent must have her own regressive needs controlled. This is so because she enters into a stronger erotic reciprocity with the child than does the father. If she cannot control her own regressive needs, the mother-child system may get stuck on one of the earlier psychosexual levels, hindering adult maturation. For instance, an overprotective mother, by over-reciprocating a child's dependency needs, may encourage them to an extent that she keeps the child from growing up.

Regression might be seen, then, from a social structural viewpoint, as maintaining or as slipping back into earlier social role patterns for the purpose of seeking gratification. Thus, incestuous feelings, especially in a mother-son relationship, whether overtly genital or covert, diffuse, and unconscious, are part of a psychological inability to grow up. The social structural aspects of Parsons' explanation relate incest taboos to automatic sanctioning systems that move the individual toward adult status and role behavior. Psychological problems resulting from some form of culturally prevalent incomplete socialization may occur within the primary family so as to hinder the complete transmutation of the diffuse erotic dependent feelings of childhood into focused adult heterosexual interests.

Stephens' (1962) documentation of significant differences in the degree of severity of unresolved oedipal feelings in polygynous as compared with monogamous societies can be reconciled with Parson's approach by suggesting that the absence of the father and long periods without genital sexuality on the part of the mother transmute the mother-child relationship into one in which the sexually unsatisfied mother seeks substitutes for genital eroticism in her diffuse erotic relationships with children.

Parsons' social-structure explanation does not account for certain differences observed between cultural groups. For example, Parsons is not convincing when he discusses the latency period as a temporary repression of erotic needs for both sexes. The evidence from cross-cultural work would suggest that there is considerable difference in degree of random sexual play allowed during the prepuberal period. Parsons' exposition does not undertake to explain taboos on sibling incest, for example, why it should appear symbolically more pressing in matrilineal societies such as that studied by Malinowski.

A most challenging comment related to the problem of the incest taboo is the observation made by Spiro (1954, 1958) in his study of the Israeli kibbutz. Spiro observed that there seems to be a spontaneous emergence of a nonverbalized sibling-incest taboo among children brought up together from birth in special collective children's quarters without any form of sustained residence with their own parents in a nuclear family pattern. These age-group domiciles for children are supervised by special nurses; an intensity of involvement occurs among the children such that age mates take on many of the attributes of siblings. There have been no reported cases within the kibbutz communities visited by Spiro of intermarriage by young adults brought up within the same kibbutz, yet there is no strong social sanction against such marriages.

Whatever the final answer to the problem of sexual avoidance and taboos, it will probably not be found by further social structural analysis. Instead, it lies somewhere within the province of intense controlled psychological investigation within cultures providing different types of socialization experience. Some theory of "affective dissonance" analogous to Festinger's (1962) cognitive dissonance seems necessary.

EXPRESSIVE BEHAVIOR IN RELIGIOUS BELIEF AND RITUAL

There is a vast literature concerning the analysis of belief and ritual from the theoretical vantage point of studies of personality in culture. In the present context we can only briefly mention some of the writings of anthropologists concerned with the psychological aspects of religion in culture.

Many early anthropologists were concerned with religious phenomena (Smith, 1894; Tylor, 1913; and Frazer, 1922, are only a few), but the essentially social evolutionary approaches of these men are no longer adhered to by most modern anthropologists. Contemporary anthropological theory is reflected, at least in good part, in such investigators as Abram Kardiner, who suggested (1939) that attitudes toward supernatural beings reflect early experiences within the primary family. For example, the techniques used to solicit aid from the deity are indicators of relationships to parents that exist within a particular culture. Grollman (1963), Chanduri (1956), and Bushnell (1958) all support this view.

Using data available through the Human Relations Area Files, there have been recent studies which have found cross-cultural correspondence between the nature

of the gods envisioned, their characteristic relation to man, and childhood experiences. As a result of a statistical survey, Spiro and D'Andrade (1958) concluded that societies in which infants were indulged were significantly more likely to hold beliefs that the behavior of the gods was contingent on the behavior of humans and that the gods could be controlled by the performance of compulsive rituals. Interestingly, such societies did not propitiate the gods by sacrificial offerings. Lambert, Triandis, and Wolf (1959) found that societies in which infants were treated relatively punitively believed in gods that were more aggressive and less benevolent toward human beings. The authors, like Kardiner, therefore concluded that the adult's treatment of the gods is a reflection of the infant's relation to his parents.

Whiting (1959b) also reported that, using a score for "infant indulgence," he found that societies high in overall indulgence of infants tended not to fear ghosts. The assumption here is that funereal ghosts are like gods—a projection of the parental image. Kiev's (1962b) findings in Haiti tend to support this.

Both initiation rites and totemism have been seen as aspects of religious behavior. Recent reexaminations of the psychological meaning of initiation ceremonies as rites of passage between childhood and adulthood have explored the question why in so many instances these ceremonies involve some form of ordeal or even torture. In anthropology, the first interest in initiation ceremonies, as in so many other topics herein considered, was evolutionary. The Australian aborigines, isolated for thousands of years, were thoroughly examined, since they were thought to afford the best clues for understanding the origin of such rites. In Australia, initiation ceremonies characteristically involve either a circumcision of the foreskin or an even more radical subincision of the penis, laying open the urethra from below. Geza Roheim (1925, 1932, 1946, 1949) was the most active protagonist of a psychoanalytic interpretation of these Australian ceremonies. He saw the initiation rituals as a dramatization of castration fears resolved symbolically by each individual's overcoming the threat implicit in adult males. Aided by religious ceremonies, the individual is reassured that such a threat is past and he can henceforth join the adult society.

Ladislav Segy (1953), suggesting a similar interpretation for African societies, proposed that such rituals serve symbolically to separate the male child from the female world of his mother. Bettelheim (1962), again reexamining Australian rituals as well as the private beliefs and rituals of psychotic children, advocated a major reorientation of psychoanalytic theory in respect to circumcision rituals. In his view, analysis only in terms of castration fears is one-sided; he emphasizes a reciprocal tendency of children of both sexes to perceive the adult sexual organs of both sexes as symbols of power. Not only is a penis a symbol of adult male prowess and status, but adult female genital organs are associated with power and the profound mystery of the generation of life. Therefore, the particular bloody ceremonies by which male Australians are initiated into manhood do not only symbolize an identification with the power and status of men, but also an abjuration of dependency on the power of women. The mysteries of female generativeness are denied and compensated for through formation of men's secret societies with secret symbols of power (totems) to be kept from the knowledge of women.

Along these lines Whiting, Kluckhohn, and Anthony (1958), using the Human Relations Area Files data in analyzing the function of male initiation ceremonies, found positive correlations between severe male initiation ceremonies and the presence of exclusive mother-child sleeping arrangements and other sexual prohibitions

related to a prolonged postpartum sex taboo separating marital partners. Their explanation, based on psychoanalytic theory, was that such conditions of infant care coupled with a postpartum sexual taboo produced a child very dependent on the mother and hostile to a somewhat distant and periodically intrusive father. Therefore, the intensity of expression in initiation rites suggests the need to overcome strong feelings of ambivalence in young men toward adult males; these feelings, which involve impulses toward violence, must be resolved in order for the young men to take the proper adult male role.

Burton and Whiting (1961), in another attempt to analyze initiation phenomena cross-culturally, suggested indirectly a position somewhat similar to Bettelheim's namely, that initiation ceremonies are directed toward overcoming a cross-sex identification problem. Burton and Whiting found more intense male initiation ceremonies prevalent in patrilocal families than in matrilocal groups; in the latter, phenomena such as the couvade allow for the symbolic expression of tendencies for identification with females.

What seems to be suggested by these various studies is that the child must overcome at least two kinds of power problems in the resolution of what is considered the oedipal conflict before entering adult status. First, he needs to identify with the power of male adults which can be used against the uninitiated immature male who himself does not share such power. He can resolve this antagonism by demonstrating adequacy through enduring ordeal and thereby joining and aligning himself with other power-possessing males, rather than by competing unequally as a helpless child. Such an analysis is in line with the mechanism described by Freud as identification with the aggressor. However, the child also needs to avoid the dependent feelings which would keep him under the domination of the dangerous mother; this need draws attention to the persistent tensions which, according to psychoanalytic theory, can originate in early mother-child relationships.

The social and psychological functions of witchcraft

Belief in the capacity to harm individuals at a distance, very often by the use of some objects symbolically representative of the person to whom harm is wished, is quite widespread among the world's cultures and has only in recent times diminished in Western society. The presence of witches, warlocks, or sorcerers, or the beliefs in their presence, is characteristic of a great many human cultures and has been of considerable interest to anthropologists interested in both social structure and personality dynamics. Norbeck (1961, pp. 188ff) summarized a good number of the anthropological studies of witchcraft. He discussed how the conventions of witchcraft vary in various cultures. In some societies, the witch himself knows himself to be a witch. In other societies, in which there are beliefs such as the belief in the evil eye, which is found in circum-Mediterranean cultures, malevolent magic may be done unconsciously. In some instances, witchcraft is done by magical formulas or by the performance of mechanical acts, whereas in others, witchcraft is performed by the simple projection of conscious thought.

It is one of the cross-cultural characteristics of belief in witchcraft that there are more accusations of witchcraft than actual evidence of practice. Humans have periodically engaged in witch-hunts as a form of institutionalized behavior in which there are institutionalized processes of accusation followed by the torture and killing of the accused witch. Witch-hunting has led to periodic outbursts in traditional

Western societies that have led to the imprisonment, torture, and killing of thousands of individuals. It is interesting that those accused of witchcraft tend to be social deviants in one respect or another (Norbeck, 1961; *cf.* B. Whiting, 1950). In societies in which there are tensions in the kinship system, very often the person accused of witchcraft occupies a social role which characteristically involves him or her in some form of interpersonal tension. In the Navaho (C. Kluckhohn, 1944), the largest single category of accusations comprises those made by women against their fathers-in-law. This seemed to be in keeping with the role requirement that a woman, upon marriage, leaves the psychological security of her own kin group and takes up residence with her husband and parents-in-law where, as an outsider, she is subjected to considerable strain.

It has generally been found in cross-cultural studies that persons who hold higher social status are rarely vulnerable to accusations of witchcraft. Also, rarely are accusations made within the primary family, though this is not an invariable rule (B. Whiting, 1950).

It is interesting to note that in many societies witches tend to be female. There is great similarity between African beliefs in witchcraft and the beliefs found in earlier centuries in Europe. As in Europe, witches in Africa are believed to be able to fly at night; they hold covens at which victims are eaten or their blood is sucked out. The supposition can be made that some of the psychodynamic interpretations of witchcraft (Bateson and Mead, 1942; Fenichel, 1945; Jones, 1951) must be correlated with peculiarities of the position of older women in the social system, as well as with vicissitudes related to methods of child rearing. There is an emotional need to project negative feelings supernaturally toward a culturally available image of a powerful, evil, malevolent woman. Projection of an evil man in most societies is very often directly related to a political figure who clearly exercises power and authority. In most societies there is no such available female authority figure, since most social organizations do not permit women to exercise an overt political authority role. Nevertheless, fear of the power of women experienced in primary relationships needs some outlet. Nadel (1954, p. 174) described the Nupe conception of a witch as "the enemy of men and of male (political and social) authority; she seeks to dominate men; her evilness is somehow bound up with the marriage state and occasionally old age, that is, age beyond childbearing; and her evilness is often directed against a husband or kin."

Belief in witchcraft is related to general cultural interpretations as to why and how illness occurs. Beatrice Whiting (1950) suggested, in a detailed correlational study of a large number of societies, that belief in sorcery as a cause of illness is related to particular features of social organization. This belief is significantly less prevalent in hierarchical societies with legal sanctioning bodies. DeVos and Wagatsuma (1959), while noting that the Japanese fit Whiting's generalization, considered that social organization alone provides a somewhat unsatisfactory explanation, since there are other psychological determinants also at issue. In the case of the Japanese, the mental mechanism of introjection is more operative in beliefs and feelings about death and illness. Illness is not generally feared by the Japanese as a punishment from an external source, but rather illness is used to make others feel guilty, or as an acceptable substitute for personal failure to achieve a task.

Spiro (1952) discussed the strong belief among the Ifaluk in malevolent ghosts who can cause disease and harm to people (ghosts among the Ifaluk are used projec-

tively much as witches are in other societies). Much of their ceremonial life consists of techniques for controlling or curtailing the activities of malevolent spirits. Whereas these techniques help to alleviate anxiety in respect to death and illness, at the same time these beliefs create further anxiety which the living society itself must continually cope with. Spiro, therefore, sought a further explanation of why such beliefs survive. He offered the interpretation that bad ghosts are useful secondarily as scapegoats, since the Ifaluk, isolated on an inaccessible island by themselves, have no other enemies on which to project negative feelings short of turning hostility inwardly on members of the group itself.

One of the most intensive, well-organized functional analyses of witchcraft is that of C. Kluckhohn (1944). Kluckhohn's analysis of Navaho witchcraft has been of considerable theoretical importance to anthropology, for he used his empirical data concerning Navaho witchcraft to propound the dual orientation he used throughout his functional theory of personality in culture. He made a major distinction between socially adaptive behavior and intrapsychically adjustive behavior. He also discussed the distinction between manifest and latent functions, as well as the general function of witchcraft in social control. He defined and illustrated the manifest functions of witchcraft for the individual Navaho as a means of obtaining wealth, gaining women, disposing of enemies, and simply being "mean" if one desired to be so. Witchcraft also has latent functions, one of which, useful to individuals who would otherwise find it difficult to gain positive recognition, is simply to get the attention of the group. A second latent function of witchcraft is to provide a socially recognized channel for the expression of the culturally disallowed. A man may, therefore, consciously fantasize aberrant behavior if such fantasy is culturally condoned as being a concern over possible witchcraft. Kluckhohn described witchcraft as a necessary outlet for the various forms of insecurity and intragroup tension that exist among the Navaho. With warfare no longer possible, there is a great deal of retreatism and social withdrawal; behavior becomes socially passive, with only some periodic release of aggressive behavior resulting from the use of alcohol.

The cross-cultural evidence shows that there is a close relationship between accusations of witchcraft, which normally lead to persecution of individuals with unpopular ideas by means of "witch-hunts," and feelings of unresolved hostility. The study of witchcraft beliefs in other cultures is pertinent to the study of prejudice in modern society (see Chapter 37 of this *Handbook*).

EXPRESSIVE AFFECTIVE SYMBOLIC BEHAVIOR. THE ANALYSIS OF FOLKLORE AND ART

One of the potentially most valuable fields for investigating expressive affective symbolic behavior is that aspect of culture usually defined as folklore. In its broadest sense, folklore includes not only myths, folktales, and legends, but also songs, art, and other secular oral traditions such as jokes—in short, the entire gamut of culturally stylized verbal traditions. Folklore, as subject matter for the study of modal personality, has been approached, as Barnouw (1963) noted, in three relatively distinct ways: (1) the attempt, either by psychoanalysts or those congenial to psychoanalytic theory, to establish the cross-cultural existence of symbolic motifs, supporting the theories of either Freud or Jung; (2) the attempt to relate specific aspects of folklore to other aspects of culture, using cross-cultural statistical correlations; and (3) the attempt to

analyze the folklore of one particular culture intensively, an approach which often involves the implicit assumptions that a modal personality does exist and that processes of cultural integration tend toward consonance in folklore, eliminating elements dissonant to "modal personality" integration. As Barnouw (1963) pointed out, however, there are several problems with any symbolic analysis of folklore. Three distinct objections can be raised in any type of symbolic analysis of expressive constituents of culture, including folklore: (1) folklore may reflect the culture and personality patterns of an earlier period than the present; (2) folktales diffuse so readily and widely that the same tale may be found in several places; and (3) the existence of a given motif in the folklore does not distinguish among the possibilities that (a) it represents a characteristic pattern of society, (b) it is a defense pattern, or (c) it is a reaction formation.

The answer to the first objection, according to Barnouw, is that if the affect in a story, or its meaning, is too different from what is desired or valued at the present time, it will not remain unchanged. He cites Wolfenstein (1954b), who noted differences in the American and English versions of "Jack and the Beanstalk." In answer to the second objection, he points out that items are not diffused or carried intact, but are modified by the culture which accepts them; thus, distortions and differences may point out the important areas of psychological differences. He answers the third objection by stating that a great deal of familiarity with the culture is required before symbolic analysis should be attempted; the analyst must be able to see what is omitted and what is emphasized in the rest of the culture.

These objections should be met in future analyses of folklore and in investigations of other symbolic or affective phenomena. In addition, any assumptions of a unimodal personality reflected in folklore, and of cultural integration as producing conformity in expressive behavior, should be questioned and tested.

LaBarre (1948, 1958, 1961) discussed some of the early, more speculative studies concerned with proving the cross-cultural existence of the Oedipus complex. He considered that the Jungian scholars and orthodox adherents to Freud's theory (for example, Geza Roheim or Otto Rank) were unscientific in their intolerance of alternative interpretations. Not all analytic attempts resulted in such stereotypical evaluations, however, and some show considerable interpretive ingenuity.

Illustrative of the large and insightful body of literature by psychoanalysts, and one of the earliest works in folklore done by a psychoanalyst, is that of Ricklin (1915), who discussed wish fulfillment in fairy tales. Rank (1952) did an extensive analysis of the birth of the hero in European folklore, and Roheim (1922, 1941) presented general suggestions for the cogency of psychoanalytic interpretations of folklore as expressive behavior. Ferenczi (1950) and Milner (1957) discussed the general ontogenesis of symbols using psychoanalytic theory, and Devereux (1950, 1957a) extended this form of analysis to a variety of cultural data.

Barnouw (1963) summarized a group of studies which used the Human Relations Area Files as a source of data in order to find correlations among various facets of culture and personality. Wright (1954), also using the correlational method for investigating folktales, discovered that societies with severe training in the control of aggression had heroes in folktales who rarely exhibited aggression toward the ingroup; and their heroes were less likely to triumph as a result of aggressive action.

The "in-depth" type of study of particular societies is that in which aspects of personality assumed to be revealed in folklore are compared with aspects revealed in

projective testing and with various facets of the particular culture. Riesman, Glazer, and Denney (1953), studying changes through time in children's stories in the United States, found a trend toward what Riesman termed "other-directed" behavior and away from the previously dominant "inner-directed" patterns. Lantis found some "major central tendencies in emotion, attitude, and behavior" reflected in Eskimo folklore (1953, p. 162). These studies, in addition to lending credence to the psychoanalytic tenet that inner states are projected outward in cultural behavior, attest to the soundness of Boas' (1935) assertion that folktales reflect cultural values.

The duality of folklore representations, as LaBarre (1961) put it, lies in the fact that there are culturally determined cognitive referents as well as culturally determined expressive referents. A more explicitly dual culture-and-personality theory of folklore is only now being developed. One of the most useful approaches is that of structural analysis.

One of the pioneers in structural analysis was Vladimir Propp, a Russian folklorist. In 1928 he uncovered a series of 31 plot units, which he called "functions," present in the structure of Russian fairy tales. He determined that they always occurred in the same order, though all 31 elements were not always present in a given tale (Propp, 1958). About the same time, the linguists Jakobson and Bogatyrev (1929) suggested that folklore and language are analogous; both are collective phenomena with definite regularities or patterns which, once established, continue through time. Jakobson, therefore, paralleling Propp's conclusion, suggested that folklore should be studied as a code. Dundes, in *Morphology of North American Indian Folktales* (1964b), developed from Jakobson's suggestion a theory for folklore analysis, using both psychoanalytic theory and structural descriptions of the patterned aspects of folklore. He suggested combining the use of Propp's "functions" approach (1958) with Pike's (1954) insistence on the use of "emic" or contextual information for all human behavior. Using Propp's discovery as well as linguistic analogs, Dundes derived his basic descriptive analytic unit called the "motifeme." The motifeme bears the same relationship to the motif in Dundes' theory as the phoneme does to the phone in linguistics. What he terms "allomotifs" are any or all of the motifs which occur in a given motifemic context. Dundes, like Propp, found that for a given culture's tales the structural sequence of motifs tends to be maintained regardless of which allomotif fills the motifemic slot.

Using a somewhat different approach, Lévi-Strauss (1955, 1956) viewed myths, in particular, as man's attempt to unify certain antagonistic attitudes. He suggested that the relationship between linguistics and the structure of myth is not causal, but on the level of an inherent dialectic. Haudricourt (1964), following Lévi-Strauss, suggested that the type of root-crop agriculture practiced in New Caledonia may have affected the ways in which social groups were conceived and, through this, the folklore. The function of folklore, in its relationship to social structure, is to unify the problems inherent in the social structure itself.

Using the structural analytic orientation and the psychoanalytic approach to meaning, Dundes analyzed certain myths (1962) and religious rituals (1963) for both their cognitive and unconscious meanings. He also worked on the relationship of verbal to nonverbal cultural patterns (1964a), relating games to folktales, proverbs to gestures, riddles to physical tasks and puzzles, folk narratives to folk songs, and games to folk dance. Others, for example, Roberts, Sutton-Smith, and Kendon (1963), using similar kinds of analysis, have found parallels in game strategy and socially valued methods of competition or cooperation or dependence on fate.

Children's humor was investigated by Wolfenstein (1954a), who found variance in the types of humor and the degree of repression of affect at different ages in childhood. Tarachow (1951) traced the historical basis of the clown and circus to the European fool and to primitive religious ceremonies. He suggested that the clown's function is to deny danger and fear or the possibility of injury. Skeels (1954), in a similar manner, found that the function of humor in Nez Perce Indian myths was to depersonalize and distance their unconscious content. Moellenhoff (1940) found humor to serve similar functions, and in addition commented, in an analysis of the popularity of Mickey Mouse, on the ubiquitous presence of sadistic aggression.

Cultural analysis of music and plastic art forms as expressive behavior

Not only symbolic analysis of folklore but also symbolic analysis of art has been used by a variety of writers in their attempts to analyze social structure, culture, and personal relationships, as well as cultural change. Most of these studies have dealt not with individual variations, but with music or art style traditions in a culture. Lomax (1959), for example, proposed a method of studying song styles cross-culturally to obtain both cultural and personality data. He demonstrated the validity of his approach with a tour de force analysis of Italian and Mediterranean music. In 1962 Lomax presented his theory of "cantometrics," in which he considered a variety of features of song style and performance. He proposed that cantometric complexes represent patterns of interpersonal relationships meaningful to the individuals in a particular culture.

Unfortunately, the analysis of art often depends entirely on manifest content analysis, since corroborative associations cannot always be elicited, and this is obviously the case for samples from distant or extinct cultures. Locke (1963) and Wallace (1950) both attempted to reconstruct a modal personality for the ancient Maya from an analysis of Mayan art, using psychoanalytic theory primarily in a manifest content analysis. Their findings tend to fit reports by writers contemporary with the Maya. Kohen (1946) analyzed the Venus of Willendorf, using techniques for reconstruction analysis similar to those used on the Maya.

The socially integrative function of art as performance has also been the object of study. Posinsky (1962), in a discussion of the distinctions between individual neuroticism and social ritual, argued that ritual behavior may not be neurotic if the conscious symbolism is meaningful in the social context. This position is also supported by Stokes (1957) and W. Phillips (1957), who saw the expressions of primitive needs and symbols in art as integrative, not neurotic, activity. Also concerned with art, Kavolis (1964) attempted to show that art styles are projections of community structure, and Fischer (1961) found art styles to be useful for cultural "cognitive maps." Ruth Bunzel (1929) did a perceptive analysis of the use of creative imagination in the art work of Pueblo potters. (See also M. Mead, 1963, on the analysis of technique in art.)

Kracauer (1947) has done a depth analysis of German films as reflecting both political trends and psychological problems in pre-Hitler Germany. Nazi movies have been analyzed in cultural and thematic terms by Bateson (1948); and Wolfenstein and Leites (1950) have attempted a cross-cultural analysis of movies from the United States, France, and England, relating values and social structure to movie plot sequences and content. Skinner (1955) has written a provocative article on similarities in both style and function between film censorship and dream censorship.

DREAM ANALYSIS IN ANTHROPOLOGICAL INVESTIGATION

D'Andrade (1961), in his thorough summary of the history of dream analysis in anthropology, noted that until the 1950's with few notable exceptions, there was but scattered attention to dream analysis as a tool in anthropology. Roheim (1914) and Rivers (1917) did early studies on primitive groups. Jones (1951) suggested that European folk beliefs in succubi, werewolves, and vampires all have their genesis in dreams and were projected dream fears, thus echoing Tylor's belief in the origin of animism in dreams. Firth (1934) studied dreams and the manifestation of ego defenses in Tikopia. Lincoln (1935), in a thorough scholarly analysis of primitive dreams, discussed several theories in primitive societies which were similar to the theory of psychoanalysis, and was struck by the sophistication in dream analysis shown by the members of these societies.

In 1947 Roheim (1947a) proposed a theoretical and methodological proposal to help anthropologists study dreams. In 1953 he published his *Gates of the Dream*, an immense compendium of psychoanalytic theory and ethnographic facts relating to dreams, myths, folktales, and other symbolic behavior. Unfortunately its broadcast approach has limited its audience.

Two basic problems which became apparent in attempts at an anthropological analysis of dreams continue to be central issues. The first problem is the establishment of whether or not cross-cultural symbolic similarity exists. Roheim (1947b), Kluckhohn and Morgan (1951), and Honigmann (1954, 1961a) argue, on the basis of their impressionistic field experiences, for the cross-cultural equivalence of symbolism and unconscious content. Roffenstein (1951) has experimented with induced symbolism through hypnosis, and has seemed to confirm psychoanalytic theories of the universality of symbolism.

The second problem encountered in anthropological analysis of dreams is the difficulty in handling dream content and its representation of unconscious wishes and attitudes. Honigmann (1961a) cautioned that dreams must be used with other elements of culture and cannot stand alone for purposes of interpretation. The more recent research has shifted to an investigation of the form and manner in which different constellations of unconscious processes manifest themselves. Since dreams in psychoanalytic theory are seen as disguised representations of motives, they should be useful as a key to understanding cultural stresses as they are experienced subjectively.

The interpretation of unconscious material is difficult without resource to the intensive psychoanalytic interview. A number of anthropologists have found it more feasible to interpret manifest content than to make gratuitous interpretations of deeply unconscious latent material. Eggan (1949, 1952, 1955), for example, in a series of articles outlined the problems of doing depth psychoanalysis in the field, and proposed the use of manifest content of dreams to show personality integration and cultural attitudes. In the 1955 article, for example, she showed how myths may have been reworked and brought into the individual's dreams. Similarly, Devereux (1957b) described how myths are fitted to particular personalities and used as guides to shamanistic behavior among the Mohave. He suggested that Mohave youths elaborate their own dreams with traditional myths, which in a sense can be understood as conscious associations.

One of the problems of dealing with manifest content is that of developing a theoretical basis for the evaluation of such material. Erikson (1954) has developed

such a system in which he categorizes manifest content according to verbal, sensory, spatial, temporal, interpersonal, and affective qualities. Erikson has used this outline to reanalyze dreams presented by Freud. He is also able to show the social and emotional aspects of the conflict over creativity in the dreamer, thus supplementing Freud's depth work on the dream.

In non-Western culture, manifest content of dreams has been used by anthropologists to indicate aspects of acculturation and culture change. King (1943), for example, showed the particular use by a Maidu dreamer of cultural elements taken from European tradition as defenses against shamanistic attacks. He suggested that dreams might also be used to study progressive stages of psychological adjustment in acculturation.

In an attempt to do just that, Lee (1958), in a study of Zulu dreams, discovered a cultural "time lag" in dreaming. In his study, dream content tended by and large to reflect the cultural content and social experience of 50 years prior and did not reflect recent changes in social sex roles. Lee's data on women's dreams related to motherhood tended to confirm the theory that high motivation leads to direct expression of wishes in dreams, and that a lower degree of motivation or greater ambivalence leads to more heavily symbolized dreams. E. M. Bruner (1956) obtained similar results in a study of American Indian groups.

An interesting similarity between native theories of dreams and psychoanalysis was found among the seventeenth-century Iroquois (Wallace, 1958) who had a well-developed theory of repression, unconscious dream symbolism, and wish fulfillment. Lincoln (1935) also mentioned several similarities between native dream symbolism theory and psychoanalytic theory. Stewart (1951) noted that the Senoi of Malay show some recognition of unconscious aggression to the extent of trying to smooth relationships in real life with those with whom they have been in conflict in dreams. The Philippine Negritos (Stewart, 1954) utilize a form of psychotherapy involving attempted integration of troubling dream fantasies.

Stewart (1954) has also completed a compendious cross-cultural study of dreams in the Philippines, Japan, China, Formosa, Malaya, Indonesia, Fiji, New Zealand, Australia, the Near East, Africa, the West Indies, and America. He reports a remarkable use of dreams by the Senoi of Malaya; dream interpretation is an important daily aspect of their culture. Stewart relates this to their pattern of facile acculturation and avoidance of warfare.

D'Andrade (1961), in discussing the general use of dreams in anthropological research, proposed a direction which such research might take. He suggested that the fact that there are differences between content, structure, function, and process in culture suggests that dreams may be considered as a type of cultural content related to these other aspects of society and culture. He concluded that a study of this relationship may provide a useful framework for anthropological study of dreams.

THE STUDY OF EXPRESSIVE BEHAVIOR CROSS-CULTURALLY BY MEANS OF SPECIAL PROJECTIVE TECHNIQUES

Given the basic assumption that personality mechanisms are revealed in expressive behavior, the social scientist, and especially the psychologist with his well-established tradition of experimentation, is eager to develop methods for the study of expressive behavior which do not depend only on sporadically revealed, spontaneous productions such as dreams or on the analysis of well-institutionalized expressive behavior

found in traditional folklore. There has therefore been a search for methods of controlled eliciting of comparable behavior by administering standardized stimuli to subjects.

The "projective" techniques which have been used to this end are so named because they are used to elicit individual projections onto a series of ambiguous stimuli. The individual, in response to indeterminant stimuli, "projects" samples of behavior, revealing inner states or characteristic processes of adjustment. Such tests, as Lindzey noted (1961), are of great interest to cross-cultural investigators.

Lindzey lists the reasons for this interest. First, projective tests provide a class of quantifiable control data which are highly comparable to the expressions of spontaneous material, the determinants of which the subjects themselves are unaware of. Second, the approach is holistic or configurational. Aspects of personality are not artificially separated from their cultural and psychological context. Most of the leading anthropologists have a similar approach to culture as a dynamic configuration. Third, the approach is "emic" to the extent that it elicits the subjective reality of the informants in a way impossible with objective-type scheduled questionnaires. Fourth, the projective-test approach is most directly relevant to theories of personality and culture or of national character, and to theories which relate infant experience and adult behavior. Finally, the skilled anthropological field worker and critical psychologist have much in common. There is a professional affinity in their approach to individual informants and in their style of generalizing from individual case studies.

Lindzey has well summarized and classified the various kinds of projective techniques that have been attempted in cross-cultural work. There is no need to recapitulate his summary here, but a few illustrations are in order. Word-association tests modified in accordance with the free-association technique developed by Freud to elicit emotionally charged material have been used only rarely (DuBois, 1944; Carstairs, 1957). A sentence-completion test was ingeniously applied to the study of aspects of Thai personality by H. Phillips (1965).

Though they seem to have rich potential as a source of information, doll-play techniques have not been widely used in cross-cultural work. The three most notable reports on systematic use of such techniques are (1) Levy's (1939) report on sibling rivalry, (2) the comparative film made by Mead on how handling of dolls reflects cultural structuring of sibling rivalry in New Guinea and Bali (M. Mead and G. Bateson, *Childhood Rivalry in Bali and New Guinea*, available from New York University Film Library), and (3) the monograph by Jules and Zunia Henry (1944) which demonstrates in great detail the lack of repression of sexual interests in the Pilagá from early childhood into adulthood.

Drawings of people as a projective device have had provocative cross-cultural results, but their utilization is hampered by a lack of general agreement as to how the results should be interpreted. Perusal of the materials elicited suggests the rich potential of this method (Mead, 1954), but to reduce impressions to valid verifiable interpretations is exceedingly difficult with this type of material. Some cross-cultural applications are found in Manuel and Hughes (1932), Anastasi and Foley (1936), Anastasi (1961), and DuBois (1944). Florence Goodenough (1926) has made the most systematic use of drawings as measures of intelligence, with some cross-cultural applicability.

One of the most widely used standardized devices for eliciting expressive material cross-culturally is the Thematic Apperception Test. While there is no generally used, uniform method for quantifying or interpreting the results, the basic method itself—

that of obtaining stories in response to standardized pictures—makes it an easily administered means of obtaining a wide variety of spontaneous perceptions of culturally determined patterns in social relationships.

In addition to the Murray edition of the Thematic Apperception Test, a number of modified editions have been developed for cross-cultural studies. Notable among these are the modified series used by (1) William Henry (1947) to obtain stories from American Indians, (2) Lee and Sherwood on South Africans (Lee, 1953; Sherwood, 1957), and (3) Lessa and Spiegelman (1954) on Pacific Islanders. Alexander and Anderson (1957) modified the TAT racially for Cheyenne children and DeVos (1961, 1962) has done the same in studying the Japanese.

The earliest interest in the use of the Rorschach in cross-cultural studies is found in Bleuler and Bleuler (1935). In this study Bleuler has emphasized the prevalence of logical, arbitrary habits of thought as characteristic of Moroccans. The general interest in the Rorschach, however, stems from the publication of *The People of Alor* by DuBois (1944). She administered Rorschach tests to 37 adult informants. These tests were analyzed independently by Emile Oberholtzer and juxtaposed to the conclusions of Kardiner based on autobiographical material and the field notes of Du Bois. This relating of field work and test evidence provided an exciting example to anthropologists of how a test such as the Rorschach could be used to obtain some idea of modal configurations in personality integration. Lindzey (1961) has summarized the variety of subsequent studies, of varying degrees of scientific adequacy, in which the Rorschach test plays some role.

Promising recent additions to the roster of cross-cultural testing devices are the semantic differential developed by Osgood (1964) and the California Psychological Inventory of Harrison Gough (1948, 1954, 1957, 1960, 1965), though the latter test is more applicable to literate cultures. It is surprising how well Gough's socialization scale has been able to distinguish between groups of delinquents in such highly divergent cultures as those of India (Gough and Sandu, 1964), Japan (Mizushima and DeVos, 1967), and the United States. The Spindlers (1965) have developed a projective test they call the Instrumental Activities Inventory. They have used it to elicit differences in class, status, and degree of acculturation among Blood Indians. For further summary of the considerable work with projective tests of varying degrees of sophistication and competence, see Lindzey (1961).

SOCIALIZATION: THE INFLUENCE OF CULTURALLY DETERMINED CHILD-REARING PRACTICES, SOCIAL ROLE EXPECTATIONS, AND VALUE ORIENTATIONS

Socialization studies are usually considered the central focus of cross-cultural research on personality. In this area of research there is a particularly high degree of overlap and interrelatedness among the theories and methods developed in the fields of psychology, sociology, and anthropology: (1) psychological theorists have turned to cross-cultural data on child-rearing practices for verification or refutation; (2) the concept of "social role," developed conjointly in sociology and social psychology, has become increasingly useful to the anthropologist as well; and (3) the concept of values, which has been of sustained interest to social psychologists, bears a close resemblance to what can be termed the configurational approach followed by a number of anthropologists interested in personality.

CHILD REARING IN CROSS-CULTURAL PERSPECTIVE

Both psychoanalytic theory and learning theory in psychology place central emphasis on early childhood experiences as determinants of patterns of adult behavior. It was therefore natural to examine evidence regarding child rearing from highly divergent societies as a means of testing hypotheses and conclusions already drawn from a study of childhood in Western society.

In her two early volumes, *Coming of Age in Samoa* (1928) and *Growing Up in New Guinea* (1930), Mead presented the first generally appreciated cross-cultural works, testing some of the inferences about maturation patterns from childhood to adulthood. *Coming of Age in Samoa*, in particular, challenged the whole field of the study of adolescence in American psychology. Mead could find no evidence in Samoa of the psychological conflict, revolt, or mental disturbance related to adolescent status considered inevitable in Western cultures. She pointed out that problems of sexual adjustment, which create difficulties for almost every adolescent in our society, were practically nonexistent in Samoan society because easy premarital intimacies were permitted there. A postpubescent Samoan girl was not faced with problems of adjustment to a new status; she did not suddenly come face-to-face with decisions concerning vocation or career. She became a woman simply by aging and eventually settling down to a more lasting marriage relationship.

Relatively few anthropological studies were necessary to challenge successfully the assumptions about the universality of adolescence as a period of strife or of the latency period as a period of lack of sexual knowledge. Adolescence studies in recent American psychology as well as in cross-cultural research have been more concerned with the influence of adult values and role expectations on youth than with the effects of physiological maturation on individual personality.

One of the principal concepts generally accepted in the study of child rearing is Kardiner's concept of "basic" personality. His theory emphasized that each society has a basic way of conditioning early experiences so as to produce similar configurations in adult personality. He called "primary" such social institutions as the family or the economic structure of the society, which define the context in which a child receives his early socialization. Institutionalized social behavior within the primary institutions gives rise to a basic personality structure which is discernible in what Kardiner called the "secondary institutions" of a culture. These are the expressive patterns in cultural behavior found in the folklore, religion, etc., examined in the previous section of this chapter.

Kardiner noted explicitly that there are in every culture a number of deviants from the basic personality pattern of that culture. Others have thought it more expedient to use the concept of modal personality to emphasize the fact that one can find modalities of behavior within a society. However, no matter how isolated or integrated the particular culture studied, modal personality types are merely central foci within a range of possibilities (Linton, 1945). Wallace (1952) demonstrated a need to have this concept extended to anticipate more than one given pattern as modal for a group. He delineated a variety of personality types among the Tuscarora Indians.

In anthropology, as in psychoanalysis, research on child rearing has varied from concern with the biological and instinctual bases of behavior to a deeper examination of the total socialization experience itself. Anthropological studies have, in general,

always attempted to preserve a holistic character. Some of the early but still most significant studies of child rearing were the films made by Bateson and Mead. These films and monographs on Bali (Bateson and Mead, 1942) graphically illustrate cultural influences on the structuring of early mother-child relationships. Noting the lack of climax in Balinese expressive behavior, Bateson and Mead documented the culturally prevalent forms of teasing practiced by the mother in weaning, and her stimulation of sibling rivalry by the use of smaller babies to produce tantrums of jealousy and rage until the small child learns to become unresponsive.

During World War II, Gorer became involved with Mead and others in the study of "culture at a distance" in a series of studies of national character. Gorer contended, for example, that some of the adult attitudes and dispositions of Russians toward authority, their periodic moodiness, and other traits could to some extent be attributable to the experience of Russian infants with restrictive swaddling (Gorer, 1949). This study met with severe criticism, but many of the global denunciations of culture-and-personality studies, using Gorer as an example, seem to have been done without a careful reading of his actual report. The study in no way purports to be a definitive statement of Russian character. It was avowedly an exploratory attempt rather than a scientific demonstration.

There have also been studies of Japanese character. The configurational approach of Ruth Benedict (1946) has been considered by some as a tour de force since Benedict herself, at the time of writing the report, had spent no time in Japan. Gorer (1943) and LaBarre (1945) also published reports specifically concerned with particular supposed child-rearing practices which could directly explain certain aspects of Japanese social behavior. Both authors emphasized the alleged influence of severe toilet training on Japanese personality. LaBarre, in particular, hypothesized an obsessive-compulsive personality pattern as modal for Japanese. Gorer's inferences as to severe toilet training are based on interviews with a small number of upper-middle-class Japanese informants interned in the New York area during the war. LaBarre's generalizations were based on observations of Japanese-Americans in internment camps in the western United States. Subsequent studies, particularly those of rural Japanese (Lanham, 1956; Norbeck and Norbeck, 1956; Sikkema, 1947; Sofue, 1958), question the empirical basis for the previous conclusions.

*Cross-cultural studies of traumatic weaning,
and other experiences of infancy and early childhood*

There have been a number of reports, especially on American Indian and African groups, concerning abrupt weaning and its possible effects on adult personality. Goldman-Eisler (1953) in a comprehensive article showed that various aspects of an adult oral character orientation are related to variations of breast feeding. There is some support for this from a variety of studies.

Geber (1958a, 1958b, 1961, 1962) reported a series of controlled psychological test measurements on the Ganda dramatically demonstrating the maturational slow-up of rural, abruptly weaned children in contrast to urbanized, more gradually weaned children. LeVine (1961), in a general survey of culture-and-personality studies done in Africa, cited several instances of abrupt weaning and discussed its residual, generally negative, effects. Similarly, a number of authors have reported abrupt or traumatic weaning experiences among North American Indians. Honigsmann (1954,

1961b), Helm, DeVos, and Carterette (1960), and Erikson (1950) in a survey gave documented instances of a seemingly widespread incidence of abrupt weaning among American Indian groups.

However, weaning and toilet training are not the only child-rearing practices which have been shown to be relevant to adult character. The Whitings (1960), for example, stressed the influence of sleeping patterns on child development. They have expressed the view that the nature and resolution of the oedipal conflict are determined more by social cultural arrangements at night than by relationships occurring during the day. For example, Whiting and D'Andrade (1959) indicated that a great majority of societies have the infant sleeping in the same bed as his mother during the time that he is nursing. It is only rarely (in 10 percent of the cases) that he has a crib or cradle of his own, and only in Western European societies (noticeably in middle-class America) does an infant have a bedroom of his own. In approximately half the societies considered, the father shares the bed with the mother and the infant.

Whiting, Kluckhohn, and Anthony (1958) further suggested from cross-cultural evidence that the pressure of exclusive mother-child sleeping arrangements and the postpartum taboo on sexual intercourse for the mother create an overdependent child with jealous hostility directed toward the father. Burton and Whiting (1961), however, proposed a different account of the result of the absence of the father. They suggested "status envy" resulting from the male child's recognition that the mother is an all-powerful being who may give him the breasts and then refuse suddenly to allow him to sleep with her after the birth of a sibling. This type of experience may be an important factor in cross-sex identification. Therefore, severe initiation rites are necessary to ensure proper social sex identification. Exclusive mother-child sleeping arrangements (Burton and Whiting, 1961) are associated with the couvade (the acting out of the female parturition role by the male). Severe initiation rites and the couvade rarely occur in the same society.

Internalization of moral directives

There are a number of studies of child rearing that deal with various aspects of independence, the socialization of aggression and self-assertion, the nature of the internalization of moral precepts, and processes of identification within the culture. A survey of a large number of these studies has been done by Whiting and Whiting (1960).

Barry, Child, and Bacon (1959) compared 104 societies. They reported that personality differences among these societies stemmed from socialization practices that are indirectly related to the subsistence economy. Societies that accumulated food supplies by gathering herbs or crops were more prone to pressure the individual to internalize feelings of responsibility, conformity, and obedience. In nonaccumulating societies (hunters and fishers), the socialization pressures were toward the expression of self-reliance and initiative.

In terms of aggression training, Biesheuvel (1959) contrasted the child rearing of the Pedi, a warlike African group, with that of the Lovodu, another group living in the same area. The Lovodu, peaceful and individualistic, consider corporal punishment to be an insult to the personality. Pedi child rearing, on the other hand, involves frequent and severe corporal punishment which seems to accentuate the development of aggressive virtues.

Similarly, LeVine (1960) contrasted the Nuer and the Gusii with respect to aggression training. Whereas the Nuer encourage children to fight for themselves, the Gusii train the young to report quarrels and attacks to some adult authority. This difference is directly related to the greater tendency of the adult Nuer to settle quarrels by feuds and for the Gusii to resolve them by litigation.

Whiting and Child (1953) noted that the earlier the age at which some socialization practices occurred, the higher, seemingly, was the degree of guilt. They proposed that the earlier the child is made to identify with the all-powerful parents, the earlier and stronger will be the identification and the guilt feelings resulting from contravening parental strictures. Their basic assumption was that severe training resulted in either a negative fixation or an anxious preoccupation, functionally defensive in nature. Though their hypotheses of direct correspondence between zones of training and forms of explanation for illness did not hold up in every respect, they did find some correspondence between difficulties in weaning and moral explanations for illness relating to aggressive behavior. This tends to be supported by Kiev (1960), who did much the same kind of analysis on other societies.

J. W. M. Whiting (1959c) noted that nuclear families tend to create more guilt in the child than families in which the mother and child are primarily alone. He also noted (1959b) that an earlier age of weaning is correlated with a greater degree of internalized belief in the responsibility for one's own actions as measured by a patient's beliefs in his own responsibility for his illness. This, however, was true only in monogamous families. Polygynous families tended to have lower guilt scores, whether weaning was early or late. Whiting (1959b) explained that the lower degree of guilt in polygynous societies and the higher degree of latent mother identification result from the mother-child sleeping arrangements characteristic of such societies. It is more difficult to have an early identification with the father when he is perceived as a distant and unrelated figure.

Working from Whiting's previous hypothesis and conclusion, Bacon, Child, and Barry (1963) found that the rate of personal crime, including forbidden sorcery, and of false accusations is high in societies with exclusive mother-child sleeping arrangements. They interpreted the greater prevalence of acting-out behavior where the child is more closely related to the mother than to the father as a compensatory attempt on the part of the male children to use aggressive behavior in order to identify with the male role (or their perception of it in its most distorted and caricatured form), in order to overcome cross-sex identity problems or identification with the female. This is one of the problems associated with the matrifocal family, and an aspect of social sex role, as we shall see below. Kohlberg (1963) has summarized much of the recent research on moral development, including a number of cross-cultural studies.

THE SOCIALIZATION OF ROLE EXPECTATIONS

In anthropology the concept of social role (Linton, 1936), along with that of value orientation, was preceded by a configurational approach to culture patterns (Benedict, 1934). For example, in examining three rather different cultures, those of the Dobuans, the Pueblo, and the Kwakiutl, Benedict applied an analysis of total configurations that permeated every aspect of life. She found a polarity between the Plains Indians of the United States, who sought unusual experiences of a Dionysian variety, and the Pueblo, who she considered lived within a culture Apollonian in tone, that is to say, more controlled and modulated in its approach to experience.

However, the notion of "culture" as a patterned continuity of some sort of static, totally integrated whole is implicitly and in some cases explicitly questioned by a number of writers, for example, Levinson (1959), Spiro (1961), H. Phillips (1963), and Inkeles (1960). These writers have found it more expedient to examine the interplay of social role patterns than to seek out key value orientations. Levinson (1959) noted that most role behavior is not simply congruent with cultural values. For any player, the idiosyncratic emotions that he feels in the various roles he takes on determine the nuances of his behavior in a given role quite as much as do the structural demands of that role. Posinsky (1963), however, argued that the idiosyncratic factors of personality are far more important than role demands in determining specific acts. Spiro (1961), who tends to integrate these arguments, pointed out that roles must be prescribed since the person must perform certain acts in order to participate in a given social system. Therefore, roles are determined by factors extraneous to individual inclinations. Nevertheless, social systems motivate people to perform roles by providing inducements that can be satisfied only by properly carrying out a particular role function. H. Phillips (1963) emphasized the fact that many individuals may undergo a considerable psychic strain in performing the expected roles. He suggested that psychological defense systems function to make role behavior possible in spite of negative inclinations on the part of the individual.

This approach seems to be supported by Wallace (1961b) who, in spelling out his "mazeway" theory, suggested that mutual predictability of behavior is more important in understanding the operation of social structure than actual shared motives. This approach tends away from the more static and culture-determinist aspects of the configurationist studies. It assumes, therefore, that in performing roles people can behave in the same way from different motivational bases. Whatever the culture, the nature of role expectations as they influence the structuring of behavior cannot be separated from a systematic study of the psychological mechanisms of internalization and the nature of moral development which induces and orients behavior within a culture. In social theory, no definitive statement has yet been made on the relationship between the psychoanalytic concept of internalization and theories of social psychology such as that developed by G. H. Mead (1934).

Social sex roles

Social sex roles determine behavior in every society. Cultural anthropology has contributed numerous data on the limitations and flexibilities of social sex-role behavior and expectations. Margaret Mead (1949) was one of the first anthropologists to direct attention specifically to the wide variability in social sex roles found throughout human cultures. Barry, Bacon, and Child (1957), in an analysis of much of this research, found that in a majority of societies girls generally experienced greater pressure toward taking nurturant attitudes, toward obedience, and toward responsibility. Boys were more influenced toward self-reliance and achievement activity. They reported notable differences in roles of men and women related to economic functions in societies. Hunting societies, for example, requiring superior strength and the use of motor skills, show far greater differences in the rearing of boys and girls than do societies characterized by large family groups with systems of cooperative interaction.

Increasing attention is being paid now to the development of matrifocal subcultures (usually found in lower-class or marginal occupational segments of modern cultures). In these segments, peculiarities of occupational distribution result in men's

domestic role being taken over directly by women. In urban lower-class cultures it is not uncommon for a father to be physically or emotionally absent or overtly disparaged by the mother (Young and Wilmott, 1957, note that this is the case in the East London slums). Such a primary family situation leads to difficulties on the part of children of both sexes, resulting in submerged cross-sex identification problems and patterned distrust between the sexes. For a woman married into a lower social status position in a mobile society, there may be expressed contempt for males of her own social segment coupled with idealization of males of higher social status with whom she has little direct contact.

Frazier's (1940) description of the effects of slavery on the Negro family in the United States is a case in point. Cohen (1955), in his discussion of Jamaican adolescent personality, also noted differential treatment of boys and girls related to the effects of slavery as well as to social structural variables associated with the absence of the father. Similarly, R. T. Smith (1956) discussed matrifocality in British Guiana, where there is a lack of work for men but women can easily find subsistence work deemed beneath the dignity of men. Resultant antagonisms centered on the disturbance of male masculinity, the fear of impotence, and the need on the part of the men to prove virility, coupled with a need to devalue or degrade the women. The women, in turn, feel disrespect and distrust of the men. It must be noted that Smith's description in some particulars fits other descriptions of Latin families such as those found in Lewis (1959), which bring out problems of mutual sexual antagonism. Such evidence from various sources poses a question concerning the general role of men in submerged class segments of stratified masculine-dominant cultures such as those of Latin America.

Matrifocality appears in some form in American Indian cultures also, where the adult male has lost his traditional role; for example, Ruth Boyer (1964) discussed matrifocality among the Mescalero Apaches, caused by the general downgraded position of American Indian males in the American economy, as well as by other factors.

At times, of course, role reversals occur, which tend to act as temporary releases from role expectations. This can occur both in generalized roles and in the social sex role itself. Generally, such behavior is seen by anthropologists as a kind of "cultural safety valve" which helps maintain institutions that customarily require restraint and even constraint. Bateson's *Naven* (1936) is a classic instance of the use of sex-role reversal for this purpose. Both Gluckman (1954) and LeVine (1961) discussed a number of these customs ritualized in African cultures, relating either to political hostility or to antagonism between the sexes. The form taken by such behavior is usually one in which there is some kind of status or role reversal: the subject or vassal reprimands his chief or lord, or the submissive female dons male clothes, swaggers, and insults men. Such a status reversal is almost invariably expressed in some form or another within all hierarchical societies, sometimes by the type of ritual in which everyone participates, sometimes by witnessing acting in a drama where the audience only passively participates in the expression.

The authors suggest that, in part at least, the genesis of such social sex-role reversal may also lie in cross-sex identification and a desire to take on some of the aspects of the opposite sex. For example, it is an almost universal concomitant of women-deprecating societies that the men in these societies also fear women. In fact, the very act of deprecating and isolating women may in fact have some of its roots in a fear of unconscious identification with women.

STUDIES OF VALUE ORIENTATIONS

Some form of value orientation is inherent in any expected role behavior. Therefore, no clear line of demarcation can be drawn between studies concerned with social role expectations and those concerned with the direct force of values as determinative influences in shaping cultural behavior. Research about values aims at defining what is variously termed the "tone," the *Zeitgeist*, the *Weltanschauung* or world view, or the "ethos" of a culture. In this respect, such research is a more recent continuation of the configurational approach.

For example, Honigsmann (1949) applied such an approach to trace out the principal theme in what he termed the Kaska ethos. Using behavioral materials as well as the inferences of Rorschach test results, he sketched the general value orientations embedded in the personality of these Northern Athabaskan hunting and trapping Indians. The personality of these groups is marked by strong emotional constraint and inhibition of ready expression of emotions in interpersonal relations, and by apathetic withdrawal or fearfulness and mistrust of others. Honigsmann related this configuration to the effects on role behavior and values of an atomistic social structure due to the low density of population and isolation of hunting bands in the ecology of the far north.

Other studies subsequent to those of Benedict have also attempted to order cultural investigation more directly around the concept of values; the most noteworthy is that of Florence Kluckhohn (1953). Instead of being directly concerned with an overall configurational approach, Kluckhohn assumed that there is a limited number of fundamental human problems faced by all people in all places. She selected for study five value orientations ordering human behavior: (1) a culture's view of human nature; (2) its view of man's relationship to nature; (3) the valuation and ordering of time; (4) the idealized personality type; and (5) the dominant modalities in man's relationship with other men. Kluckhohn and Strodtbeck (1961) applied this theory of basic orientation in values to a comparative study of the ethnic populations of Rimrock, Texas, using an interview instrument developed to test hypotheses concerning differential values. They were able to demonstrate systematic differences among Spanish Americans, Mormons, Texans, Zuni, and Navaho.

A more direct application of the Kluckhohn-Strodtbeck system is found in the study by Caudill and Scarr (1962). They studied Japanese value orientations among 619 subjects varying in age, sex, and place of residence. Caudill successfully predicted, from his knowledge of Japanese culture, the ranking of value orientations. Caudill and Scarr were also able, by comparing parents and children in 253 families, to do some assessment of changes in value orientations over one generation.

M. E. Opler (1945) broadened the configurational approach from the focus on a single integrated principle toward some concept of themes, a limited number of which, in every culture structure, comprise the nature of reality and purpose for its members. Fernandez-Marina, Maldonado-Sierra, and Trent (1958) found a series of similar values in both Mexican and Puerto Rican societies. Read (1959) conducted an extended analysis of traditional African education in terms of conscious values that are formative in the organization of behavior in adults.

Value studies in general were quite interesting to the neo-Freudians, for example, Horney (1937). Such writers had been much influenced by Benedict. After a period of being static and simplistic, value studies began to stress the importance of discon-

tinuities in the socialization experience which could lead to forms of neurotic impasse. Benedict (1938) herself was greatly interested in this sort of problem.

Most of the recent studies of values deal with acculturative situations and can be classed with other studies of social change or "culture change," the subject of the following section of this chapter.

SOCIAL CHANGE: STUDIES OF ACHIEVEMENT MOTIVATION, INNOVATION, AND ACCULTURATION

In this section we consider some representative studies of achievement motivation, innovation, and acculturation as related to the general problem of social or cultural change. The presence of strong achievement motivation in some individuals within a culture can lead to innovations which increase the rate of social change. Similarly, in acculturation situations, concern with personal achievement can make individuals with particular personality patterns especially receptive to influences coming from another culture.

The general study of social change is related to the study of personality and culture in three ways. First, one may study the psychological factors of culture or social change—those general predispositions found in a particular society which facilitate or inhibit indigenous change or change induced by outside contact. Second, one may study selectively those individuals in a particular society who are selectively amenable to acculturation. Third, one may study the effects of psychological integration of particular forms of social change (Fisher, 1965). A general symposium edited by Geertz (1963) contains a variety of studies by a number of authors pertaining to the second and third of these aspects.

The psychological approach to acculturation or culture change is, of course, only one of many possible approaches. Relatively speaking, the psychologically oriented cross-cultural studies discussed in this section have been more concerned with stability in culture than with change (Spindler and Spindler, 1963). Many acculturation situations are studied in relation to problems of social stress, a topic covered in the next section of this chapter.

ACHIEVEMENT MOTIVATION AND INDIGENOUS INNOVATION FROM A CROSS-CULTURAL PERSPECTIVE

In a static society, with its assumption of fixed adult roles where status is ascribed rather than achieved, individual motivation toward excellence is not directed toward finding new innovative means which would lead to enhancement of status. Attainment of adult social status is not conceptualized as a problem in individual achievement. However, whenever there is social change or some form of innovative development in culture, individual achievement motivation toward innovative behavior becomes an issue of interest for study.

Ever since Max Weber (1930) postulated that the rise of Protestantism and its generally shared attitudes about work, thrift, saving, and investment in Northern Europeans was related to the later development of capitalism, there has been a continuous interest in the relationship of values and other psychological dimensions to economic development. However, controlled comparative casework on motivation toward achievement behavior, from the standpoint of psychology as well as that

of social structure, is fairly recent and is as yet not well established empirically. The most ambitious attempts to date are those of the psychologist McClelland (1961), and the economist Hagen (1962).

Hagen (1962) looked for situations of "status deprivation" as stimuli to innovation within a self-conscious minority in a given society. A group affected by withdrawal of status respect may be demoralized, but it may also be prompted to find alternative means of righting itself with the disparaging wider society. Child rearing, developmental patterns, and personality growth patterns, however, must be suitable to such a response. A minority group may thus assume a commanding role in technological and economic innovation, thus promoting growth in a previously relatively nonchanging society.

McClelland (1961) summarizes much of the cross-cultural literature on need achievement. His conclusion is that entrepreneurial behavior, which is responsible for economic development, derives from child-rearing experiences stressing independence and mastery. In 1953, McClelland, Atkinson, Clark, and Lowell published a general description of what they termed the achievement motive and the behavior associated with it. They proposed that, for example, if a mother teaches her son self-reliance and competition with a standard of excellence as a child, he will as an adult seek out tasks which will reflect this training. He will attempt tasks with a moderate amount of risk and a high degree of personal responsibility for the outcome of these tasks. Such people energetically pursue instrumental activity toward goals.

Bradburn (1963) suggested that the hypotheses involved in the McClelland approach are derived from a theoretical model of the relationship between role demands and the personality characteristics of the individual. He suggested that entrance into an expected occupational role will be at least partially a function of the perception of the individual that the particular role is congruent with his needs, and that pursuing need-fulfilling activity in that role will be rewarding.

This is an argument similar to that of Inkeles (1960), that similar role requirements tend to attract similar individuals cross-culturally. Spiro (1961) also suggested that roles are occupied because they fill individual needs. The general assumption, then, is that a certain type of child-rearing pattern creates certain needs of a psychological nature in the individual, which can be fulfilled by his taking certain roles as an adult. If large numbers of people are internally motivated to attempt the particular role of entrepreneur, economic development theoretically will result.

A number of the empirical studies on achievement motivation utilize analysis of some form of verbal or written expressive material taken from a variety of cultures. McClelland and Friedman (1952) conducted an analysis of folktales of a sample of Indian tribes to uncover imagery reflecting achievement or innovation. Following McClelland's theory, Parker (1962) analyzed the Eskimo and Ojibwa mythology in terms of achievement motivation, and discerned that the Ojibwa is much more oriented toward individual achievement than the Eskimo. This finding is supported by Lantis' (1953) study of Eskimo personality. Parker then predicted that comparable samples of fantasy would show this difference. He postulated that the Ojibwa would manifest a higher level of achievement and power motivation; the Eskimo, a higher level of affiliation motivation. A sample of 29 random myths scored for manifest achievement strikingly supports this postulation.

LeVine (1963b), in looking at achievement in Africa, suggested that in the cultural pattern in much of Africa, and certainly in Nigeria, one of the aspects of high

status is conspicuous leisure. The African bureaucrat often allows a variety of (possibly incompetent) subordinates to do his work for him. A hard day's work would be seen as degrading. Success is not seen as self-reliance, but rather as having a variety of people upon whom you can depend to serve you. In comparing, specifically, the Ibo, Hausa, and Yoruba of Nigeria, LeVine made a detailed report in historical perspective to explain the differences among these ethnic groups in respect to achievement themes.

LeVine (1961) suggested that the Ibo have a cultural pattern which makes achievement of some value, and that their child-rearing practices are conducive to this end. The Ibo, though fewer in number than the other major Nigerian groups, have in larger numbers sought out education for the professional occupations opening up in Nigeria. While this seems to support the McClelland theory, LeVine offered some alternative hypotheses to explain his data. He found some support for Hagen's theory that injury to status will cause compensatory achievement activity. The British had allowed the Yoruba and Hausa to keep their kings and their ruling bodies, and while people speak of the great Hausa kingdoms, the Ibo are not mentioned, nor were the Ibo allowed to maintain their own rule. Furthermore, the manner in which they came in contact with whites was more disruptive to their previous life than was the case for the Yoruba.

PSYCHOLOGICAL ASPECTS OF ACCULTURATION

A number of other studies, most notably those of A. J. Hallowell, George and Louise Spindler, and Anthony Wallace, have been concerned with other psychological mechanisms in acculturation situations. Among the problems discussed in their work and that of others are (1) the existence of a psychological "lag" between conscious acceptance of new behavior and unconscious resistance to it; (2) ambivalence and hostility related to self-perception in an acculturation situation; (3) the orienting value of reference groups; (4) the roles of identification in the process of acculturation; and (5) forms of retreatism found in so-called revitalization phenomena.

As indicated, the psychocultural approach to indigenous social change appeared only recently in anthropological research. In 1936, Redfield, Linton, and Herskovits, in a statement on the problems of acculturation, showed much more overall concern with what specific culture traits were selectively included or excluded in the situation of cultural contact, than with the psychological mechanisms involved.

Bateson (1935), anticipating the above, yet unpublished report, argued cogently against such a simplistic trait-study approach. He pointedly suggested that the categories created by the social-science research commission were not real but imposed artificially on cultural data. To understand or to predict the results of cultural contact, the individual had to be studied as an entity.

Gillin (1942), taking a more behavioral approach to acculturation, argued that changes brought about by "acquired" or "secondary" drives could best be explored in a learning-theory framework. Gillin also suggested, however, that the relatedness of new patterns to old patterns had to be dealt with not only at the psychological level, but at the cultural level as well.

Implicit in the writings of Bateson, Jacques, Hallowell, and Gillin on acculturation is some theory of psychocultural consonance or dissonance as determinant of the acceptability of new traits. Wallace (1956a, 1956b, 1961a), in applying his "mazeway

concept," also suggests a cognitive or affective dissonance formulation (see pp. 372-374 below, on nativistic movements).

Osgood (1960), looking at situations of cultural contact, has made direct use of Festinger's concept of cognitive dissonance. Acculturation situations bring inconsistent possibilities to awareness. If the inconsistency is not too great, some change is possible or some type of compartmentalization of cognitively incompatible information results. However, if the situation contains cognitive elements which are too incompatible, some form of retreatism occurs. Osgood cites instances of such retreat in American Indian cultures. Hagen (1962) also discussed the "proper" amount of cognitive dissonance in terms of whether it results in "disorientation" or compensatory achievement. He discussed how changes in status of particular subgroups may lead these subgroups to attempt to regain status through some form of innovation.

According to Doob (1957), people with relatively greater contact with new ideas in an acculturation situation generally experience frustration, which can in turn lead to general aggression. Such people become more motivated to learn new modes of behavior either because they are dissatisfied with the old or because they simply become diffusely dissatisfied. They may encounter difficulties in learning new things, be prevented from such learning entirely by the dominant culture, or new complexities may arise which were not foreseen. The resultant extreme frustration can make them even more aggressive. The results of Doob's study among the Ganda, Luo, and Lulu of Africa showed that care must be taken in making any generalization as to the nature of direct correlation between frustration and aggression turned into innovative channels. In all three tribes these factors were variously present, but only in the case of the Luo was there evidence for a resultant social effort poured into interests in education and leadership (*cf.* Doob, 1960).

The concept of reference group, familiar to social psychologists, has been found applicable by some anthropologists studying acculturation. Berreman (1964), in applying the reference group concept to Aleut social behavior, noted that the Aleuts are what he calls "evaluation group alienated": the whites despise them. The Aleuts cope with this alienation by means of a form of role segregation; that is, they take different roles in front of whites than in front of other Aleuts. Another method of coping with it is what Berreman calls role distance. Thus, they make caustic and derogatory comments about white men in their Aleut language to other Aleuts in front of white men, to show their solidarity with the other Aleuts and their alienation from white culture. Nevertheless, they suffer from problems of being marginal men, having in some ways rejected and in some ways not rejected the dominant white culture.

Parker (1964), attempting to formulate a theoretical approach to acculturation, noted what he termed "stages" in acculturation situations. First, there is an imitative stage, followed later by a stage of internalizing the previously merely imitated behavior patterns.

Many studies suggest that there is significant psychological persistence in situations of cultural change. Jacques (1957), in the same vein as Bateson (1935) earlier, suggested that the unconscious meaning of a social institution is often much more important than its explicit or manifest function in understanding the processes of acculturation. He noted that the actual workings of institutions are determined by real people who occupy social role positions. The unconscious implicit function of a particular trait is specifically determined by its covert effect on the particular indi-

duals associated with the institutional structure of the society. Noncoercive changes cannot readily be contrary to personality functions.

Personality traits can persist in spite of acculturation; a series of studies by anthropologists has shown such persistence in non-Western cultures. Meekel (1936) traced traditional Teton Dakota values of generosity which have been retained and transmitted in their present culture. Devereux (1951c) documented in Plains Indians groups strong unconscious persistency, and Gulick (1960) found among Cherokees a strong conscious retention of conservative patterns among the present-day members of these groups.

Hallowell (1941, 1951) documented basic personality patterns among American Indians comparable to those found in the writings of traders and missionaries of the seventeenth century who first came in contact with them. He also (1949), through an analysis of Rorschach tests and TAT scores, noted the continuity of basic personality types among the Ojibwa even in the face of differential acculturation. He noted especially that the personality of the most acculturated group had not really changed but had, as it were, been pushed out of shape. Spindler (1955; Spindler and Spindler, 1961) has expanded upon Hallowell's observations. Using his Rorschach evidence, he observed that the Menomini Indians could be divided into "peyotists," "native oriented," "elite acculturated," and "transitional" groups, each with its own characteristic internal problems of adjustment and external forms of adaptation.

Relatively few psychologically oriented studies of acculturation by anthropologists have been made of the immigrant groups which now comprise American culture. Abel and Hsu (1949) compared changes in the Rorschach patterns of American-born and Chinese-born Chinese. Caudill (1952) and Caudill and DeVos (1956), using projective tests as well as other evidence, noted that the successful acculturation of Japanese-Americans was facilitated by the persistence of particular Japanese traits rather than by the development of new traits. Schermerhorn (1949), in discussing the less successful acculturation of Polish immigrants to America, found cultural persistence responsible for the fairly difficult type of adaptation that has occurred.

Louise and G. D. Spindler (1958) noted significant differences by sex in response to acculturation. In the groups they observed, they found that women became acculturated with less difficulty than men because their role was within the family and tended to change less. A similar sex differential in ease of acculturation was noted by DeVos (1954); he reported significantly lower levels of rigidity and maladjustment, as measured by the Rorschach, in American-born women of Japanese ancestry than in men.

Ausubel (1960) reported a study of 50 Maori male adolescents compared with a sample of 50 white or Pakeha male adolescents, each group separated according to rural-urban areas. A variety of psychological instruments were used. The major finding of this study was that the Maori and white pupils varied less in respect to their expressed educational and vocational aspirations than in respect to those factors necessary for the internalization and implementation of these aspirations.

"Successful" cultural adaptation may result in severe personal crises. For example, Vogt (1951) noted that many Indian veterans returning from service in the United States Armed Forces had shifted their basic value orientations; in the value terms of Florence Kluckhohn (1953), they dropped the Navaho orientation that leads man to feel "subject to nature" and adopted a position that "man controls nature." Some veterans also adopted a longer future time orientation instead of

remaining primarily oriented to the present. All veterans, however, did not assimilate readily to American values. The Navahos who tended to accept white values tended also to have personalities characterized by strong personal conflicts and inner insecurities.

Finally, there is now evidence from some areas such as Manus that allows Mead (1964) to hypothesize that very rapid and relatively successful cultural change can occur over one generation; in this case, a total group almost self-consciously participates in the working out of new institutional arrangements. The very distance to be bridged can be integrative as well as disintegrative, given particular peculiarities of the modal personalities comprising the society making the change.

Nativistic and revitalistic movements

In certain cases cultural contact proves disastrous psychologically, through the destruction of native social institutions, and in no small number of cases through the destruction of the population, in the vain efforts of a people attempting to resist by force the imposition of some outside rule. What often results is a feeling of social, political, and personal impotence on the part of the members of a defeated culture. Such movements have been discussed by a variety of anthropologists, for example, LaBarre (1947a, 1960), Radin (1913), and Wallace (1959).

Sometimes, as in the case of the destruction of the buffalo, and the attempted genocide which at one period was a conscious policy of the United States government toward the Plains Indians of North America (Collier, 1947), the means of subsistence of a group is destroyed and it faces total extinction. In such cases the threatened culture may produce an individual who preaches, often in religious terms, a doctrine of revitalization which promises to return things to the way they were before the impact of change. Such a disastrous change is often viewed by the prophet as resulting from personal inadequacies on the part of his defeated group. He may preach an austere puritanical religion, accompanied by recourse to magical activity as a means of regaining lost spiritual power.

While this pattern is not invariant, Lanternari (1965) suggests it is the usual one. Such movements are much more widespread and numerous than is generally believed. Lanternari, who has done the most thorough survey of such movements to date, recognized that much of what has been easily and popularly termed political revolt had essentially a millenarian nativistic or revitalistic character. Despite the generally brutal and ruthless suppression of such movements, they have in many instances been the core around which later effective political and anticolonial independence movements have been formed. Lanternari notes, for example, the Cao Dai and Hoa Hao movements in Vietnam, among a number of lesser known movements of this nature.

Anderson (1958) discussed the movement founded by Simon Kimbangu in the Congo in 1912 which preached a moral revival that would drive out the whites and which in time became the core of the movement that attained independence for the Congo. Mooney (1896) described the Ghost dance of the Sioux of North America in the 1890's, which began as a movement with strict, almost puritanical standards on drink and sexuality; it was hoped that these standards, together with magic ritual, would bring back the buffalo and also drive the white men away. Deardorff (1950) discussed the religious movement started by Handsome Lake, a Seneca Indian,

which also exhibited puritanical and revitalistic patterns. After World War II there were the Melanesian "cargo cults," in which entire populations of islands in the Melanesian area would stop work and involve themselves in certain magical ceremonies such as building magical models of docks or planes, the purpose of this was to speed the return of the cargo ship or plane, bringing them the goods they had been accustomed to see accompanying the American troops in those areas in the early 1940's (Schwartz, 1962).

Outrage at defeat or a desire to recover what has been lost, perhaps because it seems to be a natural response to cultural catastrophe, has until recently been the subject of very little theorizing beyond the manifest level. There is much work that could be done on the personality dynamics of the leaders or followers of movements arising from such motivation.

Wallace (1956a), introducing the concept of "revitalization," suggested that in times of mounting stress people look for a way out, some way of restoring a more satisfactory culture. War, changes of political leadership, and new economic doctrines are tried. It is under these conditions that a new prophetic leader appears, often with a solution which came to him from a divine source. He usually shows an intense concern for social reform ranging from inner ritual changes to those bringing about a substantially new culture. Wallace probed further into the possible psychological structure of the prophetic leader, noting that he is typically a disturbed personality exposed to intrapsychic as well as severe external social stress. In a later article, Wallace (1956b) related what happens to the leader and followers of such movements in terms of his "mazeway" concept.

The change of attitude brought about in the prophet is in essence a "resynthesis of his mazeway" as the original mazeway becomes increasingly discrepant with reality. When a critical point is reached, perhaps a point beyond which cognitive dissonance can no longer be compartmentalized (Festinger, 1962), or a point at which, Wallace suggested, certain psychochemical processes are activated as the result of prolonged stress, trance behavior and hallucinations begin and a religious attempt at resynthesis occurs. Wallace did not explain how new ideas come to be accepted; he only suggested that "certain conditions of readiness" are shared by other members of the group.

Frank (1961), comparing nativistic movements to psychotherapy, suggested that the cult leader acts as agent of a larger group committed to producing a desirable change in the sufferer. The healer is able to do this by virtue of his superior status or his ability to inspire expectations of relief. Feelings of dependency are aroused and attached to a socially sanctioned leader. A repetitive ritualistic relationship with the leader is established, and a set of assumptions about the problem and its solution, not easily amenable to disproof, comes to be shared by the group. There may be a mobilization of guilt and a heightening of self-esteem which can result in radical changes in attitude followed by group reinforcement of such changes.

In an argument similar to that of Frank, Kiev (1964a, 1964b) suggested that the religious aspects of revitalization movements in times of stress not only give support but actually act as cultural psychotherapy, facilitating change by producing excessive cortical excitement. This in turn leads to emotional exhaustion and a state of reduced resistance and hypersuggestibility, during which individuals can be turned toward a new point of view. Kiev detailed this sequence in Pentacostal sects arising among depressed West Indians in England. He related his formulations to that of LaBarre

(1947b) on the peyote cult, and to that of Sargant (1957), who discussed the physiology of brainwashing and conversion.

In any event, it seems clear that nativistic or revitalization movements are significant steps in culture change. Mead and Schwartz (1960) have noted a clear relationship between short-term nativistic movements and long-term cultural change. Wallace (1958) goes further, suggesting that stable systems, including religious beliefs, myths, and rituals, are often the institutionalized legacies of half-forgotten past revitalization movements. This seems a reasonable proposition, since revitalization phenomena appear to center on a social movement in which there is collective sharing of a regressive, prelogical recourse to magical manipulation and religious supplication in the face of a situation in which there are no other effective means of coping available to the distressed group. This still leaves open the problem of why some cultures seem to be more prone to certain kinds of phenomena of revitalization than others. There is also further need to explore the similarities and differences found in the qualities of charismatic leaders

Political behavior, personality, and culture

The study of the relationship of political behavior to personality and culture is one of the relatively neglected areas of research in anthropology. While the investigation of the psychological aspects of acculturative stress is not specifically related to political behavior, political behavior is implicit in some acculturative studies.

In *Politics, Personality and Nation Building*, Lucian Pye (1962) not only attempted to relate aspects of Burmese personality to political institutions and their change, but also provided a thoroughgoing analysis of the social structural factors in underdeveloped nations which lead them to accept and utilize certain types of political models and techniques in a quest for modernization. Pye is especially effective in relating the relationship between the ambivalent Burmese mother and the political attitude of simultaneous need for power and need for submission. Bauer's (1953) investigation of the ethos of the Soviet middle elite, Mead's (1951) discussion of Soviet attitudes toward authority, Inkeles, Hanfmann, and Beier's (1958) analysis of discontinuities in elite and mass orientations in the Soviet Union, and Hsu's (1955) characterization of Chinese and Americans, which deals with differences in political attitudes, are other example of such studies.

Kracauer (1947) has attempted to relate certain aspects of political behavior to personality continuities from pre-Nazi to Nazi Germany, through the analysis of themes in movies of the pre-Nazi period. Adorno *et al.* (1950) have discussed fascist personality patterns in psychoanalytic terms. They attributed a prevalence of authoritarian personality traits to members of extreme "right-wing" groups, and by implication, to members of groups espousing fascist and quasi-fascist ideologies. Schwartz (1962) presents an exemplary, intensive psychocultural analysis of the leadership of a cargo-cult politico-religious movement in the Admiralty Islands.

In many ways, these studies echo the theme presented by Fromm (1941), who suggested that modern industrial man can be characterized as desiring to "escape from freedom." Moreover, Fromm attempted to explain the social-structural, cultural, and historical reasons for the changes in political attitudes (which he sees as one aspect of psychological attitudes) (for further explanation see Fromm, 1944, and Jacques, 1957).

Almond and Verba (1963) proposed that differences in political activity and orientation must be studied and not inferred on the basis of some social-psychological theory. In their work comparing the United States, Great Britain, Germany, Mexico, and Italy on a variety of measures of attitude and activity, they made it clear that differences in political attitude and behavior reflect, or at any rate seem to correlate with, social structural and cultural attitudinal differences in general areas such as affiliation needs, general belief in the goodness of humans, etc. Thus, as LeVine (1963a) noted, while it is clear that primary socialization and the structure and organization of primary groups are related to political behavior, later socialization practices can also be important. LeVine further suggested that future studies in this area should attempt to determine the exact manner in which the authority patterns are transmitted and the parental and other authority figures are distinguished.

CULTURE, MENTAL HEALTH, AND SOCIAL DEVIANCY

The cross-cultural investigation of "mental health" raises a number of questions with which the various studies reported in the following section have attempted to deal: (1) Does the concept "mental health" necessarily involve value judgments which are culturally biased, or are there valid generalizations that can be made about faulty physiology or socialization which, irrespective of culture, leads to similar distress symptoms definable as mental illness? (2) Are there culturally specific forms of mental or emotional aberration? (3) How do different cultures define and treat mental illness, and does this cultural expectation color and determine the behavior of the mentally ill? (4) Are there differential incidences of internal maladjustment or social maladaptation which are related to cultural differences? (5) What effect does the stress evident in situations of mobility, change, or acculturation have on mental health and emotional well-being? (6) Finally, there are questions about the relationship of social deviancy to mental health. How, for example, do such phenomena as the use of drugs, forms of crime and delinquency, and situations leading to murder and suicide vary within specific cultures? These large questions cannot be considered thoroughly in this review. Space limits us to illustrating a few representative cross-cultural studies related to these topics.

CROSS-CULTURAL ASSESSMENTS OF PSYCHOTIC AND NEUROTIC MALADJUSTMENTS

There seems to be some rough correspondence between the relative presence of primitive forms of thought (often termed "primary process thinking") and emotional modes of coping and other behavioral symptoms usually associated with social maladaptation in Western culture. There is some question, however, whether one can therefore directly relate the appearance of primary process, prelogical forms of thought or seemingly infantile emotional lability to the probable cross-cultural appearance of particular forms of psychosis or neurosis.

There are reports on the use of psychological tests that suggest the apparently normative appearance in some cultures of relatively immature control over impulses and emotional processes. For example, data on the Alorese (DuBois, 1944) and the Algerian Arabs (Miner and DeVos, 1960) reveal the widespread presence of immature personality processes which appear to be normative to the forms of social adaptation

manifested within these cultures. In Gladwin and Sarason's (1953) report on Truk, the Rorschach test revealed an intense preoccupation with sex which in a Western psychiatric setting would be considered indicative of pathology. This, of course, raises the problem of just what is pathology and what is defined as such through our cultural ethnocentrism.

An important contribution to the discussion of this problem is that of C. Kluckhohn (1944), who made an essential distinction between social "adaptation," the relationship of individual to society, and psychological "adjustment," which refers to the internal personality structure. This distinction, if carefully maintained, obviates a great deal of unnecessary controversy. Psychiatrists and psychologists, when discussing mental health, are usually concerned with the considerable congruence within Western culture between adjustive mechanisms and difficulties in social adaptation. To this extent at least, they tend to apply ethnocentric value judgments. Anthropologists, in turn, focus on patterns of social adaptation with less attention to inner adjustment, and tend to neglect any judgment as to the relative levels of maturation required by various forms of observed behavior.

When Western trained psychologists or psychiatrists study disturbed patients in radically different cultures, they tend to rely on their own cultural background, and for diagnosis utilize either Western descriptive psychiatry or psychoanalytic formulations. Thus they tend to be more willing to see "mental" illness than are anthropologists. The anthropologist notes that the same overt observed behavior is not defined as "illness" in all cultures. He is mindful of the possibility that overtly "bizarre" behavior may be highly integrated in the ego of the individual, and culturally patterned as well. He therefore insists on using culturally relative yardsticks to measure behavior.

In our culture, deviations of a mental or emotional nature have gone through a series of interpretations, from "possession" by demons or "lunacy," an affliction determined by the influence of the moon, to present definitions related to "illness" or "dis-ease." It can be argued that the "illness" analogy is derivative of a "medical" treatment orientation. There is now, at any rate, an avoidance of any moral judgment of the afflicted person. Some writers would have certain forms of mental illness judged in a different framework (*cf.* Szasz, 1961). However, it is an inescapable fact that in cultures other than our own where there is no profession defined as psychiatry, internal conflicts, tensions, and aberrant behavior still must be socially defined and responded to by members of the social group. When resultant aberrant behavior disturbs the group, it is very often recognized and defined as signaling some need for "help" on the part of the afflicted individual. An individual may claim that his body is possessed by malevolent forces, and this may be seen as requiring intervention by some kind of religious rather than medical specialist. In most cultures no dilemma results because there tends to be an overlap between medical and religious practices in healing the afflicted. Some would claim that psychiatry within our culture is not thoroughly scientific insofar as it is still not entirely free from magical practices in treatment, if not in theory.

Organic and toxic psychoses are relatively easy to identify in cross-cultural study, but what are termed "functional" psychoses still present difficulties of definition even in Western psychiatry. While the general impression gained from the more recent studies is that, whatever the comparative incidence, the major forms of psychosis are to be found in every culture of any size that has been subjected to detailed investiga-

tion, there is far less agreement that every feature usually associated with a particular diagnosis is actually generic and will appear in each instance.

Murphy, Wittkower, and Chance (1964), for example, made a study of depression, examining reports by 60 psychiatrists from 30 Western and non-Western cultures. They found certain elements almost invariably associated with depression. Three symptoms, however (thought retardation, guilt, and self-deprecation), which accompanied depression in Western Christian cultures proved to be absent elsewhere. Murphy pointed out that particular detailed reports on depression in cases drawn from a particular area show that the syndrome of traits appearing in depression is obviously related to local cultural factors. Relevant examples are Grinker's report (1961) on depression in the midwestern United States, and that of Hamilton (1960) in Leeds, England. The work of Eaton and Weil (1955) on the Hutterites is also a case in point. Murphy *et al.* (1963) conducted a comparative survey on schizophrenia in which similar conclusions were drawn.

Psychological testing so far has not been related in any controlled manner to epidemiological surveys. Present-day instruments of measurement have been too limited in applicability. The methodological problems involved in cross-cultural test construction are so great that they are perhaps beyond immediate solution. Nevertheless, Wittkower and Fried (1958) have suggested that standardized techniques for more adequate diagnosis and evaluation of psychological states must be developed to avoid continuing confusion in transcultural work.

One of Field's (1960) findings among the Ashanti illustrates perfectly the need for intensive community study outside the mental hospital in order to get a balanced picture of the incidence of various mental disorders in a given population. Field, contrary to earlier researchers, found that depression is a common mental illness among Ashanti rural women. Nearly all such patients come to shrines with spontaneous self-accusations of witchcraft. The depressive person is self-effacing and nondisturbing, and therefore may not find her way to the European hospital in Africa unless she has some concurrent and conspicuous physical trouble. It is not surprising, therefore, that the psychiatrists and other doctors who see patients only in hospitals and clinics should have the idea that depression in Africa scarcely exists.

Paranoid projection on a social level is very widespread among the Ashanti. Nevertheless, Field was able to assert that it is possible to distinguish the controlled paranoia of the normal Ashanti from abnormal paranoid reactions. The valuable contribution of her study is that it presents psychotic behavior in a cultural context, with the element of supernatural belief, which is so important in these disorders, clearly delineated in its relation to precipitating social circumstances and organic factors. She believes that people from various cultures do not differ significantly from one another in their mental illnesses, but only in the cultural forms which these disorders take.

Weinstein and Schulterbrandt (1960) suggested that delusions function not as an escape from reality, but as a faulty means of maintaining feelings of reality and identity. Thus, to the degree that such an attempt is made, the delusional symbol chosen will be an element in the culture's preferred channels of social relatedness. Weinstein and Schulterbrandt used their comparative research in the French Antilles to support their argument.

Bustamante (1960) suggested, on the basis of the importance of cultural factors, that psychiatrists treating mental disorders among peoples who come, for instance,

from the non-European populations in Cuba, Colombia, Brazil, etc., should understand the latent and manifest content of the patient's projections not only in Freudian terms but also in relation to powerful underlying cultural symbols. The symbolism in dreams can be deeply cultural. For example, in African folklore the powerful maternal figure dominates the story, thus reflecting a social system based on female dominance.

ETHNOPSYCHIATRIC BELIEFS AND PRACTICES

Native definitions of mental illness

The question frequently arises whether or not the definition of what forms of behavior constitute mental illness is similar in Western and non-Western societies. The reports are somewhat mixed in this regard. Jane Murphy (1962) reported a cross-cultural study coordinated by A. H. Leighton which compared Eskimos, Mexican Indians, Mestizos, Yorubas, and Canadians with New York City dwellers. The general conclusion seemed to be that most behavior considered indicative of severe psychiatric disturbance, especially psychosis, was considered deviant by the indigenous groups as well as by Western psychiatrists. Ackerknecht (1943), taking the completely relativistic position, stated that there is no way to judge abnormality or normality except in terms of the culture itself. Devereux (1956) completely disagreed with Ackerknecht, contending that there are cross-cultural standards of absolute judgment concerning psychological maturity. Boyer (1962), dealing with the same argument and making specific reference to Apache culture, pointed up the inadequacy of a relativistic approach such as Ackerknecht's. In Boyer's view nearly all Apaches have some form of immature rigidity which would make a statistically "normal" Apache "abnormal" in respect to maturational criteria.

A. H. Leighton *et al.* (1963) discussed this problem in greater detail, specifically in respect to the Yoruba. The Yoruba have concepts of mental illness which more or less overlap with Western ones. They have definite words designating a number of syndromes and symptoms. As Fischer noted, however, these concepts include sorcery and witchcraft as well as magic. On the other hand, Jacobs (1964) suspects that the American Indians of the northwestern coast lack words for mental illness in general and for most specific disorders. He believes they handle all forms of mental illness by regarding them as forms of possession by animal spirits. Warner (1937a) noted that the Murngin relate physical and mental illness to black magic, while Devereux (1958) pointed out that Mohave ethnopsychiatry is based on the belief that psychotic activity makes sense in its own right.

Rogler and Hollingshead (1961) reported that mental disorder, when recognized as such by the Puerto Rican lower class, is rejected or condemned as dangerous and bad. A spiritualist, however, can relieve the patient of this stigma by stating that the afflicted person is endowed with special psychic powers. Moreover, hallucinations and delusions may be made acceptable to the patient himself by being explained as a test which spirits are imposing on the patient prior to endowing him with special power.

Some work on deviancy and/or psychopathology in cross-cultural perspective has centered on the analysis of the social use of deviant behavior. Devereux (1957b) suggested that certain cultures allow for deviants to have a specialized professional

role such as that of shaman, and therefore make positive use of individuals with aberrant mental or emotional conditions. In fact, such individuals may be more successful therapists than Western psychiatrists. For example, Ozturk (1964) showed how, in a heterogeneous society such as Turkey, the basic views of much of the population are opposed to the concepts of modern medicine and thus native techniques of curing are much more effective. Madsen (1964) showed how the very values that are at the base of various theories about illness can be in such conflict as to preclude any rational acceptance of different medical practices among Mexican-American populations of towns in Texas. Haitian Vodun or Voodoo is a highly elaborated folk religion involving an elaborate system of definitions of both mental and physical illnesses categorized as to desired modes of treatment. Some illnesses suggest treatment by Western physicians. Some forms of recognized insanity, if occurring in the city, are considered to require protective custody at a mental hospital or asylum, in the countryside, or at home. Other illness can be treated by nature curers who use infusions, massages, etc. Only some specific forms of behavior suggesting illness are singled out for treatment by Vodun rituals involving trance-induced behavior.

Culture-specific forms of aberrant or unusual mental states

There are a number of reports on peculiar behavior or unusual forms of mental states found only in particular cultures or geographic regions. Such aberrancies raise the question whether or not they can be explained within the limits of present nosology, or whether a new classification is necessary.

A culture-specific form of what is defined as deranged behavior found among the Polar Eskimo is called *Pibloktoq*. As Gussow (1960) reported it, the symptoms of Pibloktoq include loss or disturbance of consciousness during the seizure and amnesia following it, and behavioral features such as tearing off one's clothing, imitating animals, fleeing people, wandering off, eating feces, etc. During an attack some individuals perform remarkable feats of strength, though shortly before they may have appeared to be fatigued or in a depressive state. The attack is actually composed of behavioral elements which can often appear regularly in Eskimo culture in other contexts. According to Gussow, when nudity, sweat baths followed by rolling in the snow, and/or imitating animals are combined in a Pibloktoq seizure, they mark an attempt by the individual to restore his balance, which has been threatened by some form of severe stress. A seizure may be a defense against a feeling of utter panic, or it may be a defense against feelings of being lost, brooding over a dead relative, or fear of the future. In winter there may be stress, for example, not only from darkness or cold but from the dread of starvation, of accidents, or of being lost, which leads to a feeling of incipient panic.

Aberle (1952) described a type of psychopathological symptom found diffusely distributed through northern Asia as well as North Africa and Malaya. What is termed *latah* (cf. Abraham, 1912; Van Loon, 1927; Yap, 1952) shows two widely diffused symptoms. First, there is echopraxia and echolalia, in which the stricken individual, usually a woman, in a seemingly helpless manner imitates what another person does. The person with a severe case of *latah* may react imitatively in any novel or disturbing situation even when the other person has no wish to provoke such imitation. The *latah* may imitate natural objects or animals. There is no evident hypnotic preparation, though the behavior resembles that of some individuals under

hypnosis. Second, the onset of the disease is often attributed to severe traumatic fright of one kind or another. Fear of mice, spiders, or snakes, or even fear of the words for such animals, frequently appears. Sometimes there is a use of obscene words or frank referral to sexual functions by individuals who are normally rather shy and submissive. Aberle's interpretation is that *latah* may be a dissociated state which is produced in individuals who have a disturbance or ambivalence with respect to submissive behavior. Submission symbolically implies passive sexual experience akin to being attacked. The individual fears being overwhelmed but at the same time is attracted sexually to the possible experience. Most of the cases are women and individuals of a subservient or submerged social position, and the reaction is easily evoked by a person of authority or prestige. As described, the "imu" of the Ainu of Hokkaido (Wielawski and Winiarz, 1936) is very similar to *latah*.

Lee (1950) described a type of hysterical symptom with obvious repressed sexual content common among the Bantu of South Africa. Women suffering from this type of hysteria, called *Ufufuyana*, give accounts of having nightmares about "Tokoloshe" (a bearded dwarf with a huge penis who assaults women at night). The other symptoms mentioned by Lee include pains in the lower abdomen, some form of paralysis, and seizures during which there is incoherent talk in what the neighbors assume to be another language. The symptoms resemble forms of hysterical behavior recorded elsewhere in relation to some form of repressed sexual desire.

Yap (1963) described an unusual anxiety state called *Koro* among Southern Chinese, in which the individual develops an overpowering fear that his penis is withdrawing into his body. Yap found that this belief occurred among men with weak egos who came from families in which the father was absent. They showed previously poor patterns of sexual adjustment; some had continuous obsessive fears of venereal disease (*cf.* Van Wulften Palthe, 1936).

Being possessed by an outside power, spirit, or demon is widely reported among world cultures. For example, one occasionally encounters in Japan, though increasingly rarely, a person with fox possession coming to a neuropsychiatric clinic for treatment when exorcism by a Shinto priest has failed. When examined, the possessed person is in many instances a young bride who is having difficulty with her dominant mother-in-law.

Harper (1962) described spirit possession in Southern India as a similar response to particular tensions in the kinship structure. In the Brahman caste studied by Harper, an estimated 10 to 20 percent of the sample group of women are possessed by a spirit at some time in their life, usually as young married women. In this agrarian society, men oppressed by their elder kinfolk may openly rebel. They may have recourse to law and they may set up an independent household. On the other hand, women must go to live with their husband's family, to which they remain subject. If maltreated, they can expect no sympathy from their own families. Their only conscious means of retaliation are to go on hunger strikes or to attempt suicide. Unconsciously, they may choose to become possessed. The woman, as in Japan, is never held responsible for her affliction. The spirit by which she is possessed usually demands costly sacrifices as the price for his departure. Sometimes the girl must be sent home for a prolonged stay. Possession leads to forms of attention, prestige, and deferential treatment that the young woman would never otherwise experience.

In Haitian Vodun, trance is not defined as pathological since, as in Bali, in the context of the Barong dance (Bateson and Mead, 1942), it is encouraged as part of a

highly institutionalized religious ritual (see also Kiev, 1961, 1962b; Rogler and Hollingshead, 1961). According to Vodun (Voodoo) religious belief, a person in a state of possession is mounted by one of the numerous "loas"; that is, the person's soul has been temporarily displaced by the loa. The victim seems to be in an hypnotic state. The possessed person has temporarily introjected the image of the loa and has become identified with the deity. This transient introjection may result in a release of otherwise ego-dystonic libidinal and aggressive impulses. The normally gentle, meek, and inoffensive woman, when possessed by her ferocious loa, can strangle a dog with bare hands. Wittkower sees such a possession state as a phenomenon of autosuggestion. Possession states may be understood as a regression to the phase of infantile passive mastery in individuals whose attempts at achieving active mastery have failed.

Similarly, Ravenscroft (1962) suggested that Vodun trance phenomena are related to typical child-rearing patterns within the traditional familial social structure of the peasant family which lead to the formation of a mastery-submission conflict. Metraux, in yet unpublished work, has developed a more complex formulation for the interrelationship between childhood experiences and the practices of Vodun than that presented by Ravenscroft.

These various descriptions of possession and trance phenomena seem to indicate the widespread appearance of culturally conditioned forms of ego-dissociated states—sometimes considered normal, sometimes defined as aberrant—that use the same mechanisms found in hypnotic conditions or in behavior psychiatrically defined as hysterical in Western European cultures. Various descriptions of such behavior involving violence make this clearer. Cooper (1933), Landes (1938), and Teicher (1960), for example, have reported on the Windigo psychosis, a homicidal delusional excitement found among the Algonquian-speaking Indians of central and northeastern Canada. The symptoms of Windigo or Witiko delusions are culturally patterned around strong oral feelings related both to interpersonal relationships and to physical survival in a difficult environment. The key symptom is possession by a mythical gigantic cannibalistic monster with a heart of ice, and development of a compulsive desire to eat human flesh. It often involves violent behavior directed especially at members of one's own family.

The phenomenon known as *amok* appearing in Malayan and Philippine groups is well described by Beaglehole (1938). The first symptom is a characteristic depression which seems to result from some form of frustration. The depression deepens and the person withdraws, going into a type of dissociated trance-like condition, whereupon his energies are mobilized and he rushes into some kind of violent attack, from which the efforts of others are unable to restrain him.

This kind of behavior is very similar to what Newman (1964) described as "wild man behavior" in the New Guinea highlands. The individual thus afflicted is presumed to be suffering from incapacity to face the stresses of social and economic life. Henceforth, he is no longer to be expected by the community to meet standards of performance which would be normal for people of his age and social category.

Newman suggested that such behavior may be related to *amok* and *latah* in a functional sense. The aberrancies have to be seen not merely as expressive but as instrumental behavior. Newman relates social behavior of the "wild man" type in New Guinea to the fact that young men are under unusual strains in the society and thus expressively act out certain aggressive urges and unconscious attitudes. One of the

aspects of this behavior is the right to "steal" a variety of things with no interference. The goods are eventually returned, but the person has indicated with whom he has been unhappy. In this sense the behavior accomplishes an instrumental purpose, as does hysterical behavior in women undergoing the dissociated states described above. While the cultural contexts differ, culture-specific aberrations probably result from the same basic psychological mechanisms.

Ethnopsychiatric healing practices

It has been noted that in curing aberrant mental states ethnopsychiatric techniques are often at least as successful as, if not more successful than, Western ones. Hughes (1963) gave a fairly general cross-cultural survey of healing practices, both physical and mental, and pointed out that the problems presented by public health, including mental health, within particular cultures are intimately related to the functioning of the social system.

The techniques used in therapy in various cultures seem to bear some relation to child-rearing practices. Kiev (1960) and Whiting and Child (1953) noted that magical medical beliefs are more often accepted for their compatibility with personality variables than for their actual physiological utility. A variety of authors have discussed the importance of faith in primitive "psychotherapy" and the many similarities between the techniques of primitive societies and those of modern societies. Kiev (1964c) gave a thorough listing of the literature; as illustrative examples, he quoted Hallowell (1938) on the wide range of mental illness treated by Apache shamans; A. H. and D. C. Leighton (1941) on the Navaho use of cultural values to help integrate the ill back into the world of the well; and Devereux's (1950, 1951b, 1951c, 1956, 1957b, 1958) detailed and incisive studies on the Mohave.

LaBarre (1964) discussed the cross-cultural ubiquity of confession among North and South American Indian tribes as a cathartic therapy. A variety of authors have noted that, as Kiev (1964c) puts it, "traditional systems of psychotherapy rest on widely accepted systems of belief about the causes and cures of disease." Jane Murphy (1962) noted that the practice of shamanism in St. Lawrence Island Eskimo groups involves measures used to integrate the individual's problem with social processes, thus bringing forth group participation and support. It differs from Western psychotherapy in that its object is not "insight" but group support permitting dependent gratification.

Other writers have discussed the special attributes of the shaman in effecting cures. Ackerknecht (1942) and Kiev (1962a) in different contexts noted that not only are shamans generally capable intuitive psychotherapists, but they usually have a long list of empirical remedies. They usually do not attempt to cure someone who is clearly beyond hope, nor do they fail to use a relatively useful diagnostic procedure which allows them to guess at the crisis periods in various diseases. Also, Kiev (1961, 1962b) suggested that one of the ways in which the shaman usually works is to allow for the release of unconscious conflicts in a situation so structured as to make it ego-syntonic and not ego-dystonic, as it might otherwise be. He illustrated this by the example of spirit possession in Haiti already alluded to above.

Catherine Berndt (1964) studying aboriginal Australians, Turner (1964) studying the Ndembu of Africa, Whisson (1964) studying a Nilotic African group, and Dawson (1964) studying a West African group, all testify to the greater curative power of the

native practitioner over the Western psychiatrist in rapidly acculturating groups where acculturative stress is high. Dawson especially makes clear that the native practitioner in Africa realizes the social complications of mental illness, and that the important supportive aspects of native therapy cannot be gained from outside the culture of the patient.

In a survey of the literature on shamanism in anthropology, B. Boyer (1962) noted that, while many writers have considered the shaman to have definite personality disorders, people who (like the shaman) have preoccupations with pregenital stages of psychosexual development are not necessarily clinically neurotic or psychotic. In fact, Boyer suggested that we use Hartmann, Kris, and Loewenstein's (1946) formulation concerning regression in the service of the ego. That is to say, shamans may actually be able to use their own unconscious material much as artists do. He also noted that there is a great deal more disagreement among primitives than most authors would have one believe as to who is a shaman and who is not. In fact, he pointed out, there is a great deal of conscious and unconscious imposture.

Shamans tend to show certain similarities cross-culturally: (1) a shaman is usually inhabited by homeless spirits; (2) these endow him with magic (through the mechanisms of introjection, projection, and the appearance of hallucination, all generally indicative of an oral orientation); (3) the spirit is obtained at a crisis period (often adolescence); (4) the spirit is obtained as the result of trying to solve pregenital problems and to realign defenses; (5) there is customarily some form of defensive psychological regression; (6) there is increased contact with the preconscious; (7) hysterical tendencies are common; (8) there is a common element of imposture; and (9) oral and phallic magic is used, but little anal symbolism.

CULTURAL STRESS AND ACCULTURATION AS RELATED TO PSYCHOPATHOLOGY

Maladaptations to cultural stress

There have been a number of studies which suggest that there are in fact pathogenic factors of a very definite type in many cultures. In discussing this problem, Fischer (1965) noted that there is a major difference in emphasis in reports on sociogenic factors in mental illness between those who believe, after Freud, that maladaptive and maladjustive behavior results principally from difficulties in the socialization process and those, such as Kennedy (1961) and Leighton and Hughes (1959), who emphasize also the environmental stress related to particular role expectations of adults in pathogenic situations.

A number of writers have seen specifically deviant or psychopathological behavior as adaptive, again raising the question of the absolute standard of normality. The midtown Manhattan survey (Srole *et al.*, 1962) suggests that some form of inner adjustment problem with or without social maladaptation is very common in any total population. Depending on the criteria used, up to 80 percent of the population evidenced some form of maladjustment. This study, conducted with questionnaires and other instruments by a team from the Cornell Medical School, is one of the most ambitious yet undertaken. As part of an equally large-scale yet intensive survey of communities in northeastern Canada, D. C. Leighton *et al.* (1963) found, in the Stirling County study, that 51 to 69 percent of the population evidenced some signs of psychiatrically classifiable disorder.

A. H. Leighton *et al.* (1963), in an intensive comparative survey conducted in Nigeria, reported, among other findings, that the Yoruba have more symptoms but fewer cases of clearly evident psychiatric disorder than the Stirling County group. In Stirling County there were more symptoms among women; in Africa, more among men. They suggested, as an explanation, that the Yoruba men have role expectations which cause them to feel the effects of present-day cultural change more than women.

H. B. M. Murphy (1959) related differences in the kinds and rates of psychiatric disturbances among Chinese, Malays, and Indians in Singapore to cultural factors concerning values about work and filiation. Parker (1962), in another example of this kind of research, attempted to relate the Eskimo psychopathology to the context of Eskimo personality and culture.

Various other studies, including some epidemiological surveys, indicate that the number of social *maladaptations* (as well as what seem to be overt manifestations of *maladjustment*) is differentially related to ethnic-group membership as well as to patterns of social and geographical mobility. Some forms of stress seem to be related to cultural change as well as to minority status. Particular cultural patterns tend to induce more readily types of manifest breakdown in individuals, given situations of change, in spite of the fact that evidence could not be found that these tendencies toward social maladaptation are in any way related to particular stresses during the early formative periods in socialization. Such problems are not limited to situations of extreme change such as those occurring when there is contact between nonliterate and technologically advanced cultures. They may occur with migratory shifts of people from rural to urban settings.

For example, in a Rorschach study of acculturated and nonacculturated Algerian Arabs, Miner and DeVos (1960) reported increased signs of intrapsychic stress in the content symbolism of a sample living in a minority status position in the city of Algiers prior to the Algerian Revolution. An increase in anatomical and sadomasochistic content was evident in records of Chinese-Americans reported by Abel and Hsu (1949) and in Goldfarb's sample of American Negroes (Kardiner and Ovesey, 1951). DeVos (1961) discussed the implications of these findings (true also for Japanese-Americans) for some concept of chronic stress in situations of minority status. Dai (1945) gave a lengthy catalog of the systematic deprivation of Negroes in the United States and its effects on personality adjustment. Berreman (1960) noted that the position of the Negro in the United States is more accurately described as as outcaste position, not merely a lower-class one.

Certain personality characteristics can be postulated as resulting from a particular deprived or degraded outcaste status. Elkins (1961) noted the similarity between Negro behavior in the Southern United States and the behavior resulting from demands made on inmates in German concentration camps.

Kardiner and Ovesey (1951) noted a need in Negroes to develop a set of special defenses as a protection against white culture, especially in respect to control of aggression. Abrahams (1964) discussed the effect of the matrifocal family structure among American Negroes. The matrifocal family structure had its roots in slavery and is reinforced by the present difficulty of Negro males in finding work. Such economic difficulties tend to lead to frequent acts of desertion by the father and to consequent continued reinforcement of woman-dominated family patterns, with growing boys facing psychological problems concerning male identity. ▴

M. K. Opler (1959), in noting the difference between mental disorders among the Italian and the Irish in America, discovered that Italians can reject the male role and act out homosexuality (the Irish cannot). He also found that Indians fear women (their mothers) more, but have a richer fantasy life. Opler related these differences to family structure. Jaco (1959), on the other hand, suggested that the strength of *compadrazgo* ties and *Gemeinschaft* society prevent Mexican Americans in Texas from having the same rates of mental disorder as Anglos. Meadow and Stoker (1965) reported on cultural differences in symptoms between Mexican-American and Anglo-American hospital patients. Mexican-American males revealed the cultural *macho* emphasis on virility and were more assaultive and alcoholic. Both the Mexican-American males and females showed a tendency toward catatonic symptomatology, whereas both Anglo-American groups revealed more paranoid symptomatology.

Biesheuvel (1959) reported that in South Africa urbanization has weakened traditional African norms and sanctions without replacing them with other means of social and psychological control. Having become deculturated, many of the town dwellers are portrayed as lacking in kinship bonds or conformities derived from the traditional life; they have become anomically dislocated and "directed only by impulse." They lack effective child-training practices for the generation born in the urban environment. This situation helps explain the lawlessness, violence, and laxity of sexual morals among urban Africans. Middle-class Africans learn their values not from their parents so much as from teachers, supervisors, and employers of European descent. Biesheuvel also asserted that the traditional subsistence economies of the African tribes favor personal qualities which are not directly adaptive for work performance in an industrial culture. South African workers prefer the lot of a migrant mine worker because it allows for leisure. However, the more acculturated workers no longer look upon work itself as an interruption of the more meaningful and satisfying life of the native African areas. They become committed to their daily task and hope to advance through it. Biesheuvel discussed the concept of "Negritude," as developed philosophically by Leopold Senghore, which has become of wide intellectual interest among acculturating Africans. According to Biesheuvel, the philosophy of Negritude sees no need for inner-directed personality structure, and it repudiates the drive element in work motivation, which Biesheuvel sees as relatively lacking in Africans.

Hughes (1957) suggested that one of the best ways of viewing acculturation and the methods of overcoming acculturative stress is to use the framework of reference-group theory. He suggested that reference groups must be seen as "anchoring groups," thus emphasizing the psychological-security aspects of changing one's way of life. Acculturation is facilitated if members of the host culture are willing to accept the new group. Newcomers are thus better able to internalize the values of the host group.

Hughes (1958) suggested that any kind of stress related to change can lead either to successful acculturation or to real mental strain, or to both. He directed his attention to the problem of Eskimo acculturation and why it seems to be progressing fairly rapidly. He suggested that the idea of imitation is extremely important. Only after a period of imitation do the processes of identification occur whereby the new culture is internalized and the individuals can actually identify. In Hughes's view, contact, questioning of old beliefs, and stress, but also new opportunities for achieving security

in the new culture have all come about at the same time for the Eskimo. This fortuitous conjunction is leading to rapid culture change.

The entire question of adaptation and mental illness is, in part, related to functionalist approaches. The influence of functionalist theory in anthropology is directly apparent in a number of studies of mental illness in other cultures. LaBarre, for instance (1947b), sees the peyote cult in the Southwestern United States as having very useful and important social functions for the socially depressed Indians who are its adherents. Nevertheless, participation in this cult remains defined as aberrant behavior by others.

In another work (1962), LaBarre analyzed the personality of a snake-handling cult leader in the Southern United States. He found the cult leader to be a psychopath endowed with a defective superego. The people for whom the cult leader had appeal were very repressed and enjoyed vicariously in him his freedom from similar controls. Furthermore, he was able in a structured framework to provide a religious justification for their periodic outbursts of emotionality by labeling them as religious ecstasies.

M. K. Opler (1963) quoted an African psychiatrist to the effect that participation in normal religious rituals can be a sign of obsessional neurosis in African patients. Posinsky (1962) took a directly opposite view. He suggested that, while ritual has been described as obsessive-compulsive behavior, religion and ritual are not synonymous; rather, institutional action should be seen in the light of rites of passage or rites in intensification. For Posinsky, ritual in its social context is not neurotic. The symbolism used is conscious as well as unconscious. Since the symbols and what they stand for unconsciously are so diverse, the extent to which the unconscious possibilities of the ritual are utilized varies from individual to individual.

London (1959) would take a position somewhere between these two. He attempted to relate particular aspects of rituals to psychogenic disorders. He drew attention to the interrelationship between a Zulu woman's ritual, her social position, and a psychogenic disorder.

Ritual might also be seen, even in its integrated form of relation, as a defense against anxiety. Hallowell (1941), for example, suggested that socialized anxiety functions to permit culturally integrative danger signals. He uses *Saulteaux* anxiety over disease as an example. To make sickness leave, *Saulteaux* confess their sins; they are anxious about disease as possibly being due to witchcraft practiced on them as a result of their bad behavior. Such confessions of bad behavior by those afflicted serve as a warning to others that evil acts can bring on sickness.

While Roheim (1955) would agree that ritual is magical, he would not agree that it is necessarily psychopathic. The primary process thinking of magic (as distinct from schizophrenia) is accompanied by realistic or pragmatic measures to alleviate the condition. Schizophrenia, on the other hand, is a loss of the reality orientation, which results in a lack of communication of further attempts at problem solving. Roheim suggested that all "realistic" thinking is in some sense magical. We act on the basis of past successes, assuming, therefore, future successes. One could not function without such a premise, ill-advised as it may be when based on faulty reasoning.

Kiev and Francis (1964) go so far as to note that the differences between actual mental illness and the seemingly absurd beliefs of a given religion, which exacts specified behavior from its adherents, are sometimes so small that the two phenomena

are practically one and the same. Obviously, if this is so, only the given situational (including cultural) factors can determine the nature of the phenomenon for the particular individual involved.

The cross-cultural use of drug-induced unusual ego states

Studies of ethnomedical practice in general and, concomitantly, studies of deviant behavior have led to an increasing interest in the wide variety of drugs used either religiously or secularly to bring about unusual experiences. The use of alcohol is almost universal among the world's cultures. Tobacco has had rapid diffusion. The use of varieties of hemp (cannabis), such as marihuana and hashish, is widely different in different regions, with varying degrees of cultural acceptance or rejection. Peyote or mescaline and hallucinogenic mushrooms are used as parts of religious practices in some cultures in North America. Opium and opium derivatives have long been used in Asia despite their addictive effects.

One of the most interesting recent developments in our own culture is the increased interest in the use of psychedelic agents such as psilocybin, mescaline, lysergic acid diethylamide (LSD), dimethyl triptamine (DMT), and the psychotropic peyote buds. This is paralleled by a slowly increasing interest in such agents in various other cultures.

Harner (personal communication) noted a wide distribution in many cultures of the use of such substances as a means of achieving trancelike states for the purpose of perceiving and contacting the supernatural world. Since it seems that these substances have been important in shamanism, the long-standing controversies over shaman personalities would undoubtedly benefit from a serious consideration of the use of psychedelics in temporarily transporting such individuals to unusual states of consciousness. Harner further noted that studies on this topic would undoubtedly illuminate certain areas of cultural change and persistence of attitudes to the supernatural. It seems already clear, he noted, that the more general use of psychedelics in some societies has functioned to weaken the religious hierarchies and to permit greater individual latitude in worship (Slotkin, 1956, p. 47).

Of all the psychogenic substances, peyote has received the most attention (for example, Aberle, 1965; Brant, 1950; Collier, 1952; LaBarre, 1938, 1947a, 1960; Troike, 1962). Some anthropologists, in a statement supporting the use of peyote in the Native American (Indian) Church by their verification of its usefulness in the cultures of the American Indians and its lack of dangerous effects, were actually instrumental in establishing the right of North American Indian groups to use peyote in their religious services in the face of opposition from the white American religious missionaries.

As documented in the review by LaBarre (1960), most anthropological attention on peyote has been directed to tracing its patterns of diffusion, with relatively few focusing on the function of peyote use in social organization. Almost none have approached the issues from any psychological perspective, beyond brief descriptions of the unusual state of consciousness itself.

Harner (1965) and Naranjo (1965) have attempted an analysis of the effects of Yage (a native substance equivalent to LSD). Harner investigated the Yage (*ayahuasca*) experience while doing ethnographic research among the Conibo-Shipibo of eastern

Peru. He compared the experiences of the Indians among whom he was working to results elicited by Naranjo using the same drug on urban subjects living in Santiago, Chile, who had no experience of either the drug or contact with these isolated Indians. Specific similarities such as visions of jaguars and snakes, the feeling of the soul leaving the body, coming into contact with the supernatural, and visions of geometric forms were quite common in both groups. It should be noted that some of these subjective experiences resemble those produced by the more recently synthesized drug LSD in our culture (Blum *et al.*, 1964; Uhr and Miller, 1962; Weil, Metzner, and Leary, 1965). Naranjo tentatively suggested that these similarities are due to the similarities in the basic symbolic processes common to all men.

H. B. M. Murphy (1963) reached conclusions many of which are similar to those of LaBarre *et al.* (1951). He argued also that there is need for more research to uncover the reasons for the rather rigid and unyielding attitude of the American culture toward such agents as cannabis (marihuana). While it is generally conceded to be nonaddictive though habit forming, and while "it is established that cannabis use attracts the mentally unstable, the prevalence of *major* mental disorder among cannabis users seems to be little if any higher than in the general population" (1963, p. 19). Murphy (1963) also pointed out that cannabis tends cross-culturally to be used primarily by males under 35 without satisfactory family ties, who are economically marginal and residually unstable. If this is true, it would explain the antipathy toward its use as based partly on the personal attributes of the users.

Murphy noted, in comparing the United States with India and the use of cannabis with that of alcohol, that in India cultural value is placed on inaction. The Protestant work ethic in the United States produces a fear of inaction or of loss of self-control. Murphy suggested that cannabis users are a mild sort and do not usually occupy powerful positions in the community, whereas in the United States the users of alcohol (who tend to be hyperactive) are active participants in the community. Thus, the full weight of negative sanction falls on the cannabis user, who is more deviant than the user of alcohol. Even within Western European cultures one notices differences in respect to the use of alcohol. It has already been pointed out by Gladwin (1947) that there are very strong differences within American ethnic groups, that Jews and Irish are polar opposites in respect to the use of alcohol and the appearance of what is termed "problem drinking."

Chafetz (1964) noted that, cross-culturally, drinking and alcoholism are not the same. "Alcoholism" is a function of the cultural attitude toward the use of alcohol and the degree of social stress to which the drinker is subject. The use of alcohol as well as drugs is particularly noticeable in some minority groups within the United States (such as Negro Americans) whose traditional family organization is most disrupted. At present, there is less recourse to problem uses of drugs among the Oriental minorities, though opium was at one time considered a problem among Chinese immigrants.

The use of alcohol by Indians (introduced by white contact throughout the Americas) has, almost from the beginning, been described by white observers as culturally destructive both in North and South America. In such countries as Mexico and Peru, drinking continues to be recognized as a major social problem. For example, Simmons (1959) noted that drinking and drunkenness were, in the Peruvian village he studied, virtually universal among adult males over 15 years of age. Though the inhabitants of this village drank continually, such deviant types as the solitary drinker,

or the spree drinker who drinks for two weeks or so and then abstains for months, were rare. When present, such individuals were seen by others as rather amusing. The suppression of aggression remains a key problem in this culture, and alcohol serves to reduce much of the anxiety and strain by releasing aggressive as well as friendly feelings in normally shy and inhibited persons.

Hallowell (1953), Helm, DeVos, and Carterette (1960), and Coult (1961) placed more emphasis on the release of aggression than on the release of friendliness. These anthropologists, among others analyzing the adjustive and adaptive use made of alcohol among Indians, pointed out that it fulfills a release function in respect to aggression for many Indian groups who are overcontrolled in daily face-to-face relationships.

Murder and suicide

The presence of murder and suicide in most cultures testifies to the ubiquity of human aggression. Until quite recently, there has been surprisingly little comparative systematic investigation by anthropologists of the cultural patterning of murder and suicide, despite the pioneering work of Durkheim (1951) at the turn of the century.

In a recent survey of cross-cultural research, Dublin (1963) noted that the cross-cultural patterns of suicide continue to vary greatly in their epidemiological aspects. H. B. M. Murphy (1959), following the epidemiological approach of Durkheim, demonstrated statistically that suicide in Singapore among Chinese differed systematically with the section of China from which individual Chinese emigrated. Different rates for persons from particular provinces remain stable year by year.

A difficulty which is inherent in exclusively sociological formulations is their lack of psychological sophistication. With the development of psychoanalytic theory, more sophisticated analysis of the unconscious dynamics of suicide behavior became available (for example, Devereux, 1961, on Mohave suicide). As demonstrated by Devereux, however, the need for understanding suicide behavior in its cultural context is not resolved simply by the existence of the psychoanalytic framework. He noted that, while folk explanations for suicide among the Mohave attribute it to kin insults, disappointment in love, neglect, adultery of marital partner, or desire to achieve reunion with the dead, the actual dynamics seem to occur on at least two other levels. On the psychological level, Devereux suggested, what is really happening is a brooding resentment, identification with a previous suicide, and masochistic revenge. On the cultural level, suicide among the Mohave can be seen as the result of pressures of acculturation and increased competition for mates in a society which practices endogamy yet maintains extensive incest taboos. Devereux also noted a belief among the Mohave that all death is the result of a vicarious suicide of the mythological character Matavilya (who invented death). Thus, the Mohave see all death, even that of infants, as basically an act of will, and hence, a form of suicide. They also have a form of vicarious suicide whereby one makes oneself available for witchcraft or the attacks of an enemy (the classic example being the warrior weary of life who strays into enemy territory so that he may be killed). Thus, while it might be easy to postulate unconscious mechanisms for suicide, much of Mohave suicide behavior would be inexplicable outside the peculiar Mohave culture.

In addition to the anomic, egoistic, and altruistic forms of suicide suggested by Durkheim, Jeffreys (1952) proposed an additional category, the "Samsonic" pattern,

or suicide of revenge, in which the individual uses his death instrumentally to attack an enemy. Jeffreys developed his theory by attempting to account for the belief prevalent among certain African groups that the ghost of an individual can do harm to his enemies. Thus, suicide put one in a good position to complete vengeance which could not be accomplished while alive.

DeVos (1964), in discussing the rates and forms taken by Japanese suicide, has attempted a reformulation of Durkheim's categories of suicide which integrates cultural and psychological determinants and posits a fourth category, "acute interpersonal disturbance." This category includes the revenge suicides suggested by Jeffreys, as well as other displaced forms of autoplasmic aggression by a dependent or helpless person caught in a frustrating interpersonal situation. DeVos also suggested that in Japan there occurs with some frequency an extreme dedication to a social-occupational role, with what he characterizes as "role narcissism." When disrupted by circumstances, such dedications call forth particularly Japanese forms of acute anomic suicide. There are also cases of egoistic suicide, usually in young Japanese, which are symptomatic of an incapacity to achieve any relationship which will satisfactorily replace a primitive object cathexis directed toward the mother.

Hendin (1964) compiled a study of suicide in Scandinavia. Using dreams as well as other cultural material, he traced different personality emphases in these three similar cultures related to interpersonal experiences and expectations. The Danes, socialized more toward dependency and passivity, are aware of a capacity to induce guilt in others and are sensitive to potential object loss. Such Danish traits are similar to those found in Japanese cases of "acute interpersonal disturbance." The Swedes are more concerned with withdrawal of affection as a result of lack of performance or failure. The Norwegians, with a far lower incidence of suicide, are prone to guilt feelings related to puritanical social traditions.

The discussion of suicide does not seem separable from a discussion of homicide. Homicide epidemiologies also vary dramatically (Bohannon, 1960). Durkheim (1951), in formulating his ideas about suicide, proposed an inverse ratio of suicide to homicide based on his theoretical evaluation of the significance of these phenomena. He based this theory on data gathered from various departments in France. Bohannon (1960) disagreed with this formulation, finding no such ratio in African evidence.

Bohannon (1960) edited a volume of several contributions to the study of homicide and suicide in Africa. In generalizing the findings, he noted that sexual jealousy and political and economic factors seem to account for most male homicide and suicide. Women kill themselves or others for domestic reasons and reasons of health. Overall, the African homicide rate is somewhat lower than that of the United States. Sex ratios seem to be much more disproportionate in Africa than they are in the United States, with an infinitesimal number of African women involved as murderers or suicides. Outgroup members are always easier to kill with impunity, but a substantial number of murders are intrafamilial.

Delinquency

Systematic anthropological studies of juvenile delinquency in large nation states and cultures are just emerging. In the anthropological literature (summarized by Gottlieb, Reeves, and TenHouten, 1966) related to crime or deviancy, one can find no classification of deviant behavior conceptualized as juvenile delinquency until the emer-

gence of industrialized societies. Mizushima and DeVos (1962), making a cultural historical survey of the appearance of delinquency in Japan as well as elsewhere, found that the concept is of recent origin.

Lin (1958) distinguished between middle-class and lower-class patterns in delinquency, concluding that there are two types of peer groups in Taiwanese-Chinese society, the result of different adolescent reactions to subcultures brought about by modernization or contacts with Western culture.

Similarly, Singh (1948) discussed the lack of what is known as juvenile delinquency among aboriginal groups in India. Though "juvenile delinquency" appears in the urban areas of India, in aboriginal groups strong family sanctions prevail. Tradition in these groups effectively precludes the existence of delinquent patterns of behavior.

H. B. M. Murphy (1963) did a comparative study of Chinese, Malaysians, Indians, Europeans, and Eurasians in regard to the relative incidence of delinquency in the heterogeneous population of Singapore. The population of Singapore is about four-fifths Chinese. Of the various groups, the Chinese and Malay rates are very similar; the Indians have many more cases of delinquency in proportion to their representation in the population, and the Europeans and Eurasians notably fewer. Murphy related differential rates to the nature of the particular subcultures found in Singapore.

Eisenstadt (1951) discussed the appearance of so-called delinquent groups among the immigrant youth in Israel. He found that, among these youth, social stability is low, as is social organization. There is a lack of communication or identification with local communities. There are continuous conflicts with authority, and discrepancies in the parent's aspirations and the possibility of their realization. The author noted that the tendency toward delinquent behavior is reduced when permanent social roles can be established immediately upon arrival.

The United Nations has put out a series of review surveys on delinquency in North America (1952a), Europe (1952b), Latin America (1953a), Asia and the Far East (1953b), and the Middle East (1953c). These reviews attest to the gradual application of the modern Western conception of an "adolescent" period to other nations at various stages of modernization and industrialization. There seems to be an increase in "delinquency" in both Communist and non-Communist countries since the war (*East Europe*, 1960). The main causes of delinquency in both Eastern and Western Europe include increase in mobility, urban congestion, isolation of the individual, erosion of traditional standards, and lack of security. Unlike the United States, racial and ethnic frictions are virtually absent in most European settings.

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National Character: the Study of Modal Personality and Sociocultural Systems

ALEX INKELES, *Harvard University*

DANIEL J. LEVINSON, *Yale University*

The concept of national character is an important but problematic one in the social sciences. It has been strongly rejected in the hereditarian or racist forms in which it was couched by earlier writers. Seen in more modern perspective, however, it poses fundamental problems for social-scientific theory and research: To what extent do the patterned conditions of life in a particular society give rise to certain distinctive patterns in the personalities of its members? To what extent, that is, does the socio-cultural system produce its distinctive forms of "social character," "basic personality structure," or "modal personality"? Further, what are the consequences, if any, of this patterning in personality for stability or change in the societal order?

The ancient problem of national character thus reasserts itself, in contemporary guise, as a problem in the interrelations of (modal) personality with culture and social structure. In this form it becomes a major—and vexing—topic of multidisciplinary inquiry, standing as it does at the interface of individual psychology (including psychoanalysis and psychiatry) and the social sciences. Its multidisciplinary character gives it a strongly ambivalent appeal. On the one hand, it provides an opportunity for integration of the various disciplines involved, and is thus a stimulus to advances in basic theory; on the other, it requires a crossing or transcending of disciplinary boundaries and thereby presents a threat to established disciplinary viewpoints and identities. And, indeed, the study of modal personality has undergone a rather remarkable evolution in several disciplines over the past three or four decades. We begin with a brief historical review of developments in anthropology, psychology, and sociology. This review will set the stage for the more systematic treatment of theoretical and research issues in the sections that follow. For a more extensive survey and analysis of this historical development, see Singer (1961).

HISTORICAL DEVELOPMENT OF THE STUDY OF NATIONAL CHARACTER

Anthropologists have for many years played a prominent part in the study of national character. This is to be understood largely in the light of the internal development of anthropology as a discipline. In the period preceding the 1920's, social anthropology

was still largely concerned with outlining the main social norms of the societies investigated. It was assumed that virtually all individuals behave in conformity with the prescribed norms of their society. In the subsequently changed climate of opinion to which men like Rivers, Sapir, and Boas contributed heavily, anthropologists became increasingly aware of the individual both as culture carrier and as cultural innovator. The growing interest in the study of deviant behavior led to greater recognition that the fulfillment of cultural imperatives depends on the individual's internalization of cultural values and his learning of appropriate behavior. The individual's personality came to be seen as an expression of his culture, and consequently as a source of data for the study of culture equal in importance to arts, rituals, and other traditional foci of anthropological investigation.

Until the mid-1930's, anthropologists continued to emphasize the description of the individual, though their accounts made little use of systematic psychological theory. This trend was reflected in a substantial number of biographical studies (Kluckhohn, 1945). The standard procedure was to present the individual's retrospective life history substantially as he spontaneously recited it. On the whole, these descriptive studies sought to demonstrate the ways in which the individual reflected cultural norms in his behavior and his conscious attitudes. Insofar as anthropologists turned to psychology for theories to use as guides for their new pattern of investigation, they turned almost exclusively to Freudian psychology (Kluckhohn, 1944).

An event of major significance occurred with the publication of Ruth Benedict's *Patterns of Culture* (1934), in which she gave fuller statement to important issues she had discussed earlier (1928, 1932). In this book Benedict went beyond the mere behavioral description of the individual as a product of his culture, to characterization of the *psychological coherence* of the culture as a whole. Benedict did not have a well-rounded and integrated conception of individual psychology, and she was neglectful of the developmental aspects of personality. Her emphasis, as characterized by Gorer (1950, p. 106), was rather on "the psychological coherence of the varied institutions which make up a society." Further, she did not make a clear conceptual distinction between the sociocultural system and the personality as a system, but rather appears to have assumed that the psychological coherence of the individual personality was isomorphic with the psychological coherence of the culture. Nevertheless, Benedict's work served as a model and stimulus to other anthropologists who, more centrally concerned with the individual personality and utilizing more fully developed psychological theory, later studied the relations of culture and personality.

Tremendous impetus was given to this work during and immediately after World War II, when a variety of anthropologists, psychoanalysts, and others attempted explorations into the psychology of various nations, particularly the wartime enemies of the United States (Bateson, 1942a; Benedict, 1946a, 1946b; Dicks, 1950, 1952; Germany After the War: Roundtable, 1945; Gorer, 1943, 1948; Gorer and Rickman, 1949; LaBarre, 1945, 1946; Leighton, 1945; Mead, 1942, 1947a, 1951a; Schaffner, 1948). During this period the study of national character was a major area of anthropological interest.

The decade from 1935 to 1945, bracketed by Benedict's *Patterns of Culture* (1934) and Kardiner's *Psychological Frontiers of Society* (1945b), was the seminal period of development. The period that followed was one of self-confident affirmation as the results of wartime research and new field work poured in. These were represented in the two editions of Kluckhohn and Murray's *Personality in Nature, Society and Culture* (Kluckhohn and Murray, 1948; Kluckhohn, Murray, and Schneider, 1953).

In the early 1950's the climate of opinion began to change. Between 1955 and 1965 at least three major collections of research reports and critical reviews appeared (Cohen, 1961; Hsu, 1961b; Kaplan, 1961b). There was a widespread feeling that the study of culture and personality had come to a point of intellectual crisis, unsure of its future. Thus, in Hsu's (1961b) review volume entitled *Psychological Anthropology*, Honigsmann wrote that during the 1950's he had observed diminishing support, changing interests, and loss of appeal in culture and personality studies. In the same volume, Spiro suggested that: "Having succeeded in its attempts to induce personality psychology to incorporate sociocultural concepts within its conceptual apparatus, and having succeeded in legitimizing the use of personality concepts by anthropology, it might be argued that its [culture and personality study's] original mission has come to its end" (p. 468). Honigsmann and Spiro seem to have made accurate observations about the historical trend in anthropology: since the early 1950's, it has largely withdrawn from the study of personality and culture in general, and of national character in particular.

The picture has been quite different in academic psychology. Until recently, few psychologists entered the study of national character, and the attitude generally manifested toward this field was predominantly cold, if not hostile. Here again some clue is to be found in the internal development of the discipline. Until recently, psychologists were concerned less with the influence of social factors in human psychology than with the psychological substratum underlying social behavior. This was true of Freudian theory in the sense that Freud viewed human behavior largely in terms of a genetically given maturational cycle in which different biologically rooted drive systems emerged as central forces in determining behavior. It held as well, though in a different sense, for academic experimental and animal psychologists who were concerned with learning, perception, and other psychological processes *per se*. They studied how the organism learns or perceives, without regard to social context or setting, and largely without concern for individual or group differences. Indeed, a prime objective was "to control for" social influences, which often meant, in effect, to rule them out of consideration in the search for universal principles governing individual behavior.

As for the social psychologists, who were concerned with man as a social product, much of their energy during the 1920's and 1930's went to attacking generalizations about national or group character. Such generalizations were associated with race theory and were regarded as unscientific stereotypes, involving wholesale projection of our values onto other groups, or as rationalizations of our own social structure (Klineberg, 1935, 1940; Murphy, Murphy, and Newcomb, 1937). The emphasis on rigorous method and experimental technique in social psychology, and the rejection of personality theory, also contributed to the aversion to research on national character.

Since the late 1930's, however, several new trends have emerged in academic psychology. Personality theory and research have assumed a more prominent and legitimate place in the discipline as a whole; clinical psychology has become an established field and has influenced developments in other fields; and social psychology has vastly expanded in theoretical scope, in research interests, and in methods of inquiry. By the mid-1950's, these trends had advanced to the point where the study of modal personality in cross-societal perspective could be generally accepted as an appropriate concern. Psychologists became increasingly ready to move from the aca-

demic laboratory to the social (and international) field setting. Studies of national differences in achievement motivation (McClelland, 1961), of conformity as judged by Asch-type experiments (Milgram, 1961), of social distance (Triandis and Triandis, 1962), and of interpersonal cohesiveness (Rommetveit, 1954) have become common entries in the tables of contents of our sociopsychological journals. There is now a sufficient body of research by psychologists to permit an extensive review by Lindzey (1961) of the use of projective techniques in cross-cultural research, and by French (1963) of cultural differences in perceptual and cognitive functioning. Indeed, the entrance of psychologists into this field has had a major impact on its evolution in the past decade. In turn, cross-national research is exerting a significant influence on personality theory and general social psychology (Campbell, 1961).

Psychoanalysis and related viewpoints stemming from clinical psychiatry played a crucial part in the early development of this field. In the years during and following World War I, Freud (1922, 1930, 1938) became increasingly interested in ego theory and social psychology. Indeed, his work on the psychological aspects of social groups, culture, and history had a considerable influence on the later evolution of his conception of individual personality. During the 1930's, anthropologists such as Sapir (1948), Mead (1942, 1946), and Kluckhohn (1944, 1949a) found in psychoanalysis a stimulus and guide to the study of "personality and culture." However, it was not merely that anthropologists turned to psychoanalysis. What was equally important, a number of creative psychoanalysts turned to anthropology and other social sciences. Kardiner (1939, 1945b) embarked upon a long-term collaboration with the anthropologist Linton. Erikson (1945) engaged in ethnographic field work on two Indian tribes with Mekeel, and has over the years carried out a series of psychocultural and psychohistorical investigations (1942, 1950, 1958, 1964). Other psychoanalysts such as Alexander (1951), Fromm (1936, 1941), Reich (1946), Reik (1951), and Roheim (1943b) made early and significant contributions. Harry Stack Sullivan (1947, 1948) called for the development of an inclusive social psychiatry and social psychology. These and other investigators did not write parochially, from within the boundaries of their clinical disciplines. They read widely in the literature of the social sciences. They worked with, learned from, and taught social scientists. And they envisioned the emergence of a new, psychosocial approach, instead of seeking merely to apply existing personality theory to social phenomena. These intellectual developments reflected the crisis in Western civilization during the 1930's and 1940's. Since the early 1950's, however, psychoanalysts have played a less prominent part in the study of relationships between personality and social systems.

In this development, sociology remained curiously underrepresented through the 1940's. This is anomalous if we approach the problem from the perspective of sociological social psychology. The viewpoint usually identified as the Chicago school (notably Cooley, Park, and G. H. Mead) would be quite congenial to the study of group differences in personality. These writers conceived of the personality mainly as the individual internalization of roles, meaning by roles the ways of acting and norms governing them which were predominant in any given social environment. However, for those who followed Durkheim—and his influence, via the Chicago school, was preeminent in American sociology—the idea of psychological differences in national or other groups was resisted on the grounds that sociological facts must be explained only sociologically. That is, differences in behavior were to be explained directly—without introducing personality variables as intervening influences—by

differences in norms or by differences in the pressures which different social structures exert on the incumbents of particular positions acting in specified roles. This was the viewpoint which Dennis Wrong (1961) dubbed "the oversocialized conception of man." In this climate of opinion, very few sociologists ventured into the study of personality as a factor in social organization and functioning.

In the last 15 years, however, the intellectual climate in sociology has been influenced by the work of Parsons (1964), Inkeles (1953, 1959, 1963), Inkeles and Levinson (1954, 1963), Janowitz (1953), Swanson (1956), and others. These writers have emphasized the importance for sociological analysis of understanding the motives, dynamics, and modes of adaptation of the members of society. The legitimization of studies of social character was greatly enhanced by Riesman's (1950) provocative study of modes of conformity viewed in historical perspective (see Lipset and Lowenthal, 1961). By the mid-1960's, one can point to a modest but growing body of research by sociologists, as well as some political scientists, seeking to determine whether groups do in fact differ in personality and, if so, to study the influence of personality on the functioning of sociopolitical systems (Almond and Verba, 1963; Inkeles, 1961; Inkeles, Hanfmann, and Beier, 1958; Inkeles and Levinson, 1963; Lane, 1962; Lerner, 1958; Pye, 1962; Stoetzel, 1955). Perhaps the coming of age of the field in sociology was signaled by the inclusion of a chapter on "Personality and Social Structure" (Inkeles, 1959) in the review volume *Sociology Today*, sponsored by the American Sociological Association. Since then there have appeared at least three collections of readings whose titles explicitly link personality and social structure (Smelser and Smelser, 1963; Stoodley, 1962; Ullman, 1965).

Any attempt at critical review and evaluation of the work in this broad field must necessarily reflect the predilections of its authors. It is to be noted, therefore, that this paper represents the close collaboration of a sociologist and a psychologist, who affirm both the autonomy and the interdependence of the various social-science disciplines. Whatever the disciplinary area to which it is assigned, the study of modal personality and its relation to the sociocultural order is of central importance to social science as a whole. Indeed, it might be argued that this is the problem *par excellence* for integrated social-science research. Certainly this review would be more comprehensive, though perhaps more disjunctive, had we been joined by members of related disciplines, notably anthropology, history, economics, and political science.

We take the *common* data of all social science to be *socially relevant human behavior* as directly manifested by individuals and groups or as embodied in cultural artifacts and social institutions. The term "common data" is not to be taken to exclude the fact that any given social-science discipline may legitimately be concerned with major bodies of data *not shared* with the others. From the full range of socially relevant human behavior, the various social sciences select and group their data according to different conceptual schemes and analytic constructs. The central abstractions or analytic frameworks derived from observed behavior in psychology, anthropology, and sociology are, respectively, personality, culture, and social structure (Parsons and Shils, 1951). Personality is taken to be a property of individuals, culture of human groups, and social structure of institutions and societal systems. For analytic purposes, each of these is treated as a discrete conceptual entity, despite the fact that they are abstractions from much the same range of human behavior.

The broad field that deals with interrelations between "human nature"—that is, individual psychological characteristics and processes—and life in social groups may be designated as the study of "personality and the sociocultural order" (Haring,

1948; Kluckhohn, Murray, and Schneider, 1953). Several foci of interest may be discerned within this broad area. The students of "culture and personality" have concentrated on the interrelations between personality and certain selected aspects of group life, in particular the group ethos, patterned lifeways or themes, designated as culture (Barnouw, 1963; Honigsmann, 1954; Hsu, 1954). Rephrasing the problem as "personality *in* culture," various studies have focused their attention on the individual, seeking to understand how life in a particular culture distinctively shapes the original human nature (Bateson, 1942b, 1944; Kluckhohn, 1949a; Kluckhohn and Mowrer, 1944; Lindesmith and Stauss, 1950; Linton, 1945; Sargent and Smith, 1949). An equally important problem, though one that has received less attention, concerns the *effects* of personality modes on social structure and functioning; see, for example, the work of Ginsberg (1942), Gorer (1950), Klineberg (1944, 1949, 1950), Leites (1948), Mead (1951b), Kaplan (1961b), Spiro (1961), Hagen (1962), and McClelland (1961).

Our emphasis will to some extent overlap these and to some extent will be distinctive. The major sections of the chapter deal with the following issues:

1. *Problems of definition: national character as modal personality.*
2. *Personality theory: approaches to the analysis of modal personality.*
3. *Theoretical problems in the empirical delineation of modal personality; requirements for comparative, cross-societal research.*
4. *Methodological problems in the assessment of modal personality. We consider here the merits and limitations of various research techniques and sources, including personality study of individuals, psychological analysis of collective adult phenomena, and study of child-rearing systems.*
5. *The influence of the sociocultural system on the formation of modal personality.*
6. *The influence of modal personality on the functioning social system. How do modal personality characteristics contribute to stability and to change? We deal primarily with the overall societal system and, to a lesser extent, with component institutions and roles.*

Illustrative material will be drawn primarily from modern industrial societies—in particular, the United States, the Soviet Union, Germany, China, and Japan—but this is not meant to indicate concern only with modern large-scale social systems. For we take it that, despite the different complexity of the phenomena involved, the same general principles of analysis can be applied to both large- and small-scale societal systems (Aberle *et al.*, 1950; Levy, 1952; Parsons, Bales, and Shils, 1953). Our particular use of large-scale social systems for illustrative purposes is designed partly to compensate for the relative neglect of such systems and the special problems they pose, and partly to avoid duplication of material presented in Chapter 33, which treats a related problem from a different point of view.

PROBLEMS OF DEFINITION: NATIONAL CHARACTER AS MODAL PERSONALITY

Despite the considerable variety of theoretical approaches evident in the literature, there are relatively few formal definitions of national character and few discussions of the proper scope and limits of this field of study (but see Duijker and Frijda,

1960). This lack of explicitness has had the advantage—and one that should not be underestimated—of encouraging the expression of intuitive, clinical modes of thought and of permitting the free play of ideas so important in a new field of exploration. However, it does not seem too early to survey the various explicit and implicit definitions and to seek a general definition of national character. We shall attempt to do this and, in the process, to indicate some of the major issues in this field. Our effort may fruitfully be compared with that of Duijker and Frijda (1960), who consider six competing conceptions of national character.

One use of the term “national character” does not link it directly with personality, but rather treats it as a particular way of looking at culture and the culturally patterned behavior of individuals. Benedict (1946b, p. 274), for example, stated that “to the anthropologist, the study of national character is a study of learned cultural behavior.” Mead (1951b, p. 81) at times treats national character in a very similar way, distinguishing as three variant approaches (1) the comparative description of certain culture configurations, (2) the “analysis of the relationship between the basic learnings of the child . . . and the other aspects of the culture,” and (3) the study of the patterning in any culture of selected interpersonal relationships such as parent-child and peer-peer relations.

One may, of course, define national character as a particular way of looking at the coherence of culturally defined values or behavior patterns. However, beyond the task of studying the regularity with which certain values or patterned behavior sequences are manifested in any culture, there remains the task of determining the regularity with which certain *personality patterns* among the individual members may be manifested. Further, to define national character as more or less synonymous with the sum of learned cultural behavior makes any effort to relate culture to character largely an effort to relate culture to itself (Inkeles, 1951). Our own preference is to define national character as having reference to personality patterns. Both Mead and, to a lesser degree, Benedict, used national character at times in this sense.

Perhaps the main thread running through the numerous definitions is that national character refers to characteristics that are *common* or standardized in a given society. This aspect of commonality or frequency is most directly represented in Linton's (1945, 1949) conception of national character as *modal* personality structure. In using the statistical concept of mode, he takes account of the fact that there are actually a great variety of individual personality characteristics and patternings in any society; a modal personality structure is, then, merely one that appears with considerable frequency. There may, of course, be several modes in any distribution of variants.

Frequency is not the only defining criterion that has been used, though there is less agreement concerning other criteria. The term “basic personality structure” is used by Kardiner (1939, 1945a, 1945b), the psychoanalyst whose collaboration with Linton provided one of the early prototypes of the joining of psychological and anthropological theory and technique. The term “basic” in Kardiner's formulation refers to the sociocultural matrix rather than to that which is “deepest” in the person. The basic personality must be common or modal in the society, and is psychologically central in the sense that it is a generic source of diverse behavioral manifestations. But most important, it is conceived as that personality structure which is most *congenial* to the prevailing institutions and ethos of the society (Linton, 1949, and in Kardiner, 1939). In other words, the basic personality structure consists of those dispositions,

conceptions, modes of relating to others, and the like, that make the individual maximally receptive to cultural ways and ideologies, and that enable him to achieve adequate gratification and security within the existing order. ✓

Fromm (1941) takes a similar approach in his concept of "social character," though his general theory differs considerably from Kardiner's. He defines social character as "the nucleus of the character structure which is shared by most members of the same culture" (1949, p. 4). This definition, emphasizing as it does the aspect of "sharedness," would seem to make frequency or modality the defining criterion. However, as happens so often in this field, Fromm's discussion and application of his central concept implies a definition quite different from the original explicit one. He states that the primary criterion of social character is not its frequency but rather its *requiredness* by the social organization. In other words, the social character consists of those characteristics which lead people to conform, to "want to act as they have to act" (1949, p. 5) in the existing social milieu. For example, an industrial society, with its ever-increasing mechanization and bureaucratization of the occupational system, *requires* personality traits such as discipline, orderliness, and punctuality on a large scale if it is to function effectively.

The position of Linton and Kardiner, and particularly of Fromm, implies a distinction between (1) the "socially required" or socially congenial personality structures—those that can function optimally in a given setting—and (2) the actual, modal personality structures that in fact are to be found in the members of the society. Clearly, a disparity often exists between (1) and (2), particularly in a modern industrial society whose institutional structures are likely to change more rapidly than, or in a different direction from, its modal personality structures. This distinction is therefore of special importance for both the definition and the empirical study of national character.

In our opinion, "national character" ought to be equated with modal personality structure; that is, it should refer to the mode or modes of the distribution of personality variants within a given society. "Societal requiredness" or "congeniality with the culture pattern" should not be part of the *definition* of national character. The *socially required* personality (for example, the personalities best suited to a bureaucratic or an assertive-individualistic social structure) deserves the status of an independent though significantly related construct. Given this distinction, the degree of congruence between the modal personality structures and the psychological requirements of the social milieu emerges as an important problem for research.

This point has an important methodological implication. If national character refers to modes of a distribution of individual personality variants, then its study would seem to require the psychological investigation of adequately large and representative samples of persons *studied individually*. However, most assessments of national character have not proceeded along these lines. They have, rather, been based largely on the analysis of *collective policies and products*—rituals, institutional structures, folklore, media of mass communication, and the like. Psychological analysis of these phenomena can contribute significantly to the overall psychological characterization of a society (Bateson, 1943; Bateson and Mead, 1942; Crozier, 1964; Erikson, 1942; Hsu, 1953, 1961b, 1963; Metraux and Mead, 1954; Wolfenstein and Leites, 1950). Indeed, systematic analysis of the immanent psychological characteristics of collective enterprises and their products is becoming an increasingly significant aspect of social-science research. In the national-character field, however,

this should be a supplementary rather than a primary method, the primary one being the large-scale study of individuals.

✓ Another important feature of the general definition of national character is that its components, whatever their specific nature, are *relatively enduring personality characteristics*, for example, character traits, modes of dealing with impulses and affects, conceptions of self, and the like. These are not phenotypic, behavior-descriptive terms. Rather, they are higher-level abstractions that refer to stable, generalized dispositions or modes of functioning and may take a great variety of concrete behavioral forms. They can be inferred from behavior (preferably under conditions that maximize the possibilities of dependable measurement) and are conceived of as comprising only one of several sets of factors that determine action. Other determinants of action include the sociocultural framework, immediate situational demands and opportunities, the individual's changing skills, interests, and moods, and so on.

It follows from this conception that national character cannot be *equated* with societal regularities of behavior (habits, customs, folkways, etc.). A given behavioral regularity may or may not reflect personal characteristics that are enduring in each individual and common to all individuals who show it. Conversely, behaviors that are superficially different may express a single underlying disposition. We must therefore progress beyond the cataloguing of behavior items to the psychological analysis of behavior.

✓ Since one of the main analytic functions of the concept of national character is to enable us to determine the role of psychological forces in societal patterning and change, it must be defined conceptually as a *determinant* of behavior rather than concretely as a *form* of behavior. And it must have some stability or resistance to change; for characteristics that change easily under everyday situational pressures can hardly be of major importance as determinants of either social stability or organized social change. The contemporary formulation of national character as a field of study is based on the conception of personality as a relatively enduring and organized system of dispositions and modes of functioning in the individual. Given this definition, we are then faced with the empirical problem of determining whether modal personalities exist in modern national states, and, if they do, of delineating their manifold determinants, their historical stability, and their role in the collective national life.

It should also be noted that "national character" refers primarily to commonalities in *adult* personality. The focus on adult personality is determined by the two chief theoretical questions in this field: (1) What is the role of modal personality trends in establishing, maintaining, and changing collective behavioral-ideological structures? (2) What is the role of sociocultural forces in producing and changing modal personality trends? The first question is concerned almost entirely with adults, that is, with those who participate responsibly in the societal institutions and who determine collective policy. In the second question, modal adult personality is the dependent variable, the phenomenon to be understood. However, answering the second question requires starting with infancy and studying development through all *preadult* age levels.

It is, of course, true that psychological development does not end with the attainment of adulthood and that socially relevant changes in modal personality from youth to old age merit more attention than they have yet received either in the national-character field or in developmental psychology. For the point under discussion here,

however, the childhood-adulthood distinction is the key issue. The aim of developmental study is to determine the role of relatively standardized child-rearing procedures and settings (including both the family and significant extrafamilial influences) in producing personality regularities in the growing children. The modes of childhood personality are important, from the national-character point of view, only to the extent that they limit the varieties of adult personality that the children can develop.

A further word is in order concerning the concept of "mode" and the question of the degree of psychological uniformity to be found within any society. Many of the early and even recent writings on national character have attributed remarkable uniformities of psychological makeup to complex national and ethnic groupings; see, for example, nineteenth-century "race theory," Le Bon (1899) on the natives in French colonies, Brickner (1943) and others on Germany. Such sweeping generalizations, particularly when they are based on very limited and uncontrolled observations, are with good reason criticized as reflecting mainly the stereotypes and personal motives of their proponents (Duijker and Frijda, 1960; Hertz, 1944). The assumption of a relatively high degree of psychological uniformity is often made, though in a more explicit and cautious manner, in ethnographic studies of nonliterate societies. Ethnographers often assume that the distribution of personality variants in a given society is strongly *unimodal*—that there is a single prevailing personality pattern, and perhaps a few secondary modes representing unusual and "deviant" types. It would appear that the degree of intrasocietal variability is greater than the norm-centered descriptions of culture ordinarily suggest (Kaplan, 1954; Spindler and Spindler, 1961; Wallace, 1952a, 1952b).

Our general definition of national character does *not* posit a heavily unimodal distribution of personality characteristics. National character can be said to exist to the extent that modal personality traits and syndromes are found. How many modes there are is an important empirical and theoretical matter, but one that is not relevant to the definition of national character.

Particularly in the case of the complex industrial nation, a *multimodal* conception of national character would seem to be theoretically the most meaningful as well as empirically the most realistic. It appears unlikely that any specific personality characteristic, or any character type, will be found in as much as 60 to 70 percent of any modern national population. However, it is still a reasonable hypothesis that a nation may be characterized in terms of a limited number of modes, say five or six, some of which apply to perhaps 10 to 15 percent, others to perhaps 30 percent of the total population. Such a conception of national character can accommodate the subcultural variations of socioeconomic class, geosocial region, ethnic group, and the like, which appear to exist in all modern nations. See, for example, Florence Kluckhohn (1950), Kluckhohn and Strodtbeck (1961), and Linton (1949) on "status personality"; Kardiner and Ovesey (1951), Dai (1948), Elkins (1959), and Pettigrew (1964) on Negroes; Devereux (1951) on "areal" versus "tribal" personality; Davis (1941), Davis and Havighurst (1946), and Ruesch (1948) on class; Roe (1947, 1956) and Rosenberg (1957) on occupations; DeVos (1961), Hallowell (1951), and Spindler (1955) on the acculturation of migrants.

Apart from its probable greater empirical validity, the pluralistic (multimodal) notion of national character has several theoretical advantages. By explicitly raising the issue of the number of modes present in a given society, it tends somewhat to counteract the inclination toward stereotyping and spurious homogenizing in our

descriptions of national populations. It reminds us that our characterizations of societies refer to clusterings drawn from a distribution whose variability needs also to be noted. The formulation in terms of a plurality of modes provides a more adequate psychological basis for understanding the internal dynamics of the society, such as political cleavages, shifts in educational, industrial, or foreign policy, and conflicting elites in various institutional structures.

This approach is not primarily concerned with the psychological *uniqueness* of a given society; its first concern is, rather, to characterize the national population in terms which are psychologically important and socioculturally relevant. It will not be surprising if some or all of the observed characteristics and patternings are also found in other nations. In short, the study of national character may ultimately contribute to our understanding both of what is distinctive in single nations and of what is relatively universal in human society.

One final consideration concerns the distinction between matters of *definition* and matters of *empirical demonstration*. In our present limited state of knowledge and research technology, it cannot be assumed that any nation "has" a national character. At the same time, this assumption is often so attractive, and its expected usefulness in dealing with urgent problems (for example, problems of wartime policy or peacetime collaboration between culturally very different nations) is so great, that social scientists are often persuaded to investigate the *role* of national character in, say, national policy, before the *existence* of a national character has been demonstrated. Strictly speaking, the first empirical problem is to determine what modes of personality, if any, are present in a given society. Before this can be done adequately, however, we must define, at least in a general way, the conception of national character that is to guide our investigative efforts.

To sum up: We have suggested that "national character" refers to relatively *enduring personality characteristics and patterns that are modal among the adult members of the society*. This is a purely definitional statement, not an empirical one. It describes a hypothetical entity that may or may not exist. If modal personality structures cannot be found in modern nations, then the term "national character," at least as it is currently defined, will acquire the status of an empirically useless concept. We are now only in the process of determining whether national character constitutes a genuine field of study. However, even this phase has value. If it is shown that national character does not exist, social science will have dealt a severe blow against popular stereotypes and ethnocentric thinking about nations; and if modal personality structures are found, the way will be opened for the development of new insights into the relations between individual and society.

PERSONALITY THEORY

APPROACHES TO THE ANALYSIS OF MODAL PERSONALITY

The first task in the empirical study of national character is, as we have already indicated, to describe the modal, adult personality structures (if any) within the given society. Each modal structure is to be described in terms of its *contemporaneous* characteristics and their organization. This task should be distinguished from that of *developmental* analysis, which is concerned with the genetic sequence leading to the present personality and with the manifold determinants of that sequence. It should

be noted, however, that although these two problems are analytically separable, some knowledge of a person's development may be necessary for the assessment of his present—particularly his more unconscious—characteristics (Hartmann and Kris, 1945). Developmental problems in national-character research will be discussed in a later section.

The investigator's personality theory, explicit as well as implicit, contemporaneous or developmental in emphasis, will heavily influence the nature and adequacy of his descriptions of adult modal personality. Ideally, the personality theory used in this field should have certain basic characteristics. Its assumptions and concepts should comprise an explicitly formulated, coherent whole. It should largely determine the empirical description and analysis of modal personalities; that is, it should generate a relatively standardized analytic scheme—a descriptive-interpretive language—in terms of which modal personalities can be delineated. The variables in the analytic scheme should be *psychologically significant*, in the sense that they represent intra-personal characteristics that play an important part in determining the individual's thought and behavior; and *socially relevant*, in the sense that they influence the individual's readiness to maintain or change the existing sociocultural system. The theoretical framework should be comprehensive and universally applicable, so as to ensure maximal richness in the analysis of the single society and maximal cross-societal comparability of findings.

It is evident at the outset that "individual psychology" does not yet provide personality theories that meet the above criteria to a satisfactory degree. This lack has been one of several major hindrances to the systematic description of modal personality structures, and must be kept in mind in any critical appraisal of the work to date. At the same time, there has been frequent neglect or misuse of available personality theory by investigators in this field.

We turn now to a brief consideration of the major theoretical approaches that have been used in the study of modal personality.

PSYCHOANALYTIC THEORY

Psychoanalysis has played a crucial but somewhat paradoxical role in the study of national character. As Kluckhohn (1944) has noted, no other conception of personality has had a comparable impact on social scientists, and Mead (1940, 1951b) has particularly stressed its importance for the development of the study of culture and personality. Psychoanalysis provided a conception of human nature and human development that had the possibility of universal application in all societies. Psychoanalytic ideas about identification, introjection, and the unconscious operation of moral judgment have greatly influenced the social-scientific study of values and social norms (Kluckhohn, 1951; Mead, 1949; Parsons, 1964; Parsons and Shils, 1951). The theory of the unconscious, of the multiplicity of motives and meanings to be found in any human activity, has led to a change in the orientation of empirical research. Increasingly, in social science as in academic psychology, concrete behavior descriptions are being supplemented by more interpretive analyses which take psychological meanings into account.

However, a number of limitations in early (pre-1930) psychoanalytic theory have complicated its convergence with sociocultural theory. Psychoanalysts have long recognized that the social environment is of decisive importance in personality

development, and that ego and superego formation are based on the interplay between environmental forces and the unfolding maturational potentials of the organism (Fenichel, 1945; Freud, 1936). Nevertheless, relatively little has been done within the mainstream of psychoanalysis to *conceptualize* the environmental forces and the person-environment interaction. Conceptually, psychoanalysis has tended until recently to remain relatively "encapsulated" within the individual, to focus on instinctual-unconscious processes, and to neglect the cognitive-conative processes that play an important part in social adaptation (Brunswick, 1952; Frenkel-Brunswick, 1940, 1942; A. Freud, 1946; Hartmann and Kris, 1945; Loewenstein, 1950; Reich, 1945; White, 1963). During roughly the past 25 years, the recognition of these and related difficulties has led to new developments within psychoanalysis, notably the increased concern with ego processes and social forces and the emergence of various "neo-Freudian" viewpoints.

The developments in psychoanalytic theory can be considered here only as they are reflected in the national-character literature. (For another brief discussion, see Chapter 4.) Our starting point is that psychoanalysis as of, say, 1935, was regarded as a major but incomplete theoretical basis for the study of national character. Accordingly, though it has been a seminal *influence*, a primary source of concepts and hypotheses, it has seldom been taken over intact as a *systematic theoretical position* in this field. For the most part, each investigator has been theoretically "on his own," taking an approach in which traditional psychoanalytic theory is modified, fractionated, or blended with a variety of other viewpoints. This theoretical atmosphere, if somewhat confusing, has had the value of inducing great conceptual ferment and cross-disciplinary exchange. Indeed, it is evident that the study of personality and culture has not merely involved an application of psychoanalytic theory, but has actively contributed to basic theoretical developments in psychoanalysis and related viewpoints.

However, the reaction to Freudian theory has, in general, been more critical than constructive. There have been few attempts to formulate a systematic personality theory and few discussions, at a general theoretical level, of the psychological issues that should be covered in a comprehensive analysis of national character. In general, the use of personality theory has been implicit and, so to say, casual. Linton, for example, defines personality as "the organized aggregate of psychological processes and states pertaining to the individual" (1945, p. 84). He suggests that it would be "wise" to remain vague about the specific nature of the processes and states. Finally, utilizing a mixture of functionalism and habit theory, he arrives at the concept of *value-attitude systems* as perhaps the most useful one for the description of individual and modal personality. He indicates in only the most general way the nature and operation of these systems, and does not clearly differentiate between "personality" and "culture," both of which are characterized in value-attitude terms.

For Gorer (1950), "national character" refers to common, individual personality structures. These are comprised, according to one definition (p. 109), of "motives," and according to another (p. 120), of "the structuring and combination of traits or motives." However, Gorer has not concerned himself with the definition and conceptual status of these terms. Though the concept of *structure* is crucial in his strictures on proper theory, he does not present a theory of the nature, organization, and functional interaction of motives and traits. Moreover, he has drawn most heavily on Hull's learning theory, in which the concept of personality structure is lacking

(see Chapter 2). He combines this learning theory with a simplified Freudian theory of psychosexual stages, but has made relatively little use of Freudian or other theories of adult personality *structure*. For these and other reasons, his analyses ordinarily have a somewhat segmented quality. Thus, in his study of Japan (1943), he relates a given adult personality characteristic, for example, "anxiety over uncleanness," to a specific feature of childhood, "anal training," and to certain behavioral expressions, but he says relatively little about its role within the contemporaneous adult personality.

That psychoanalytic theory has assumed an increasingly important place in the work of Margaret Mead is readily apparent if one compares, for example, her earlier formulations regarding sex roles (1939) with her later ones (1949). Her approach, however, is primarily *psychocultural*. She has developed a strongly psychological conception of cultural patterning but has shown relatively little explicit concern with individual personality theory or with modal personality structure as such. Her orientation toward characterizing the collective rather than modal-individual patterning is expressed in, and supported by, her predominant use of institutional practices, rituals, and documents as materials for societal analysis, and by her relative neglect of individual personality analyses. This is due in part to the fact that Mead often studied cultures which she was obliged to view "from a distance." In her earlier studies of the South Seas (1939), data on intelligence and other individual characteristics were obtained. However, individual personality configurations were described only incidentally and for illustrative purposes, such as to point up certain forms of deviance. And in other cases, such as the Bali study (Bateson and Mead, 1942), where field work was done, or the Russian study (1951a), where informants were used on a large scale, the absence of individual personality analyses is notable.

Erikson's observation about his own analysis of the Sioux and Yurok (1950, p. 185) applies equally well to most of Mead's analyses "... in describing conceptual and behavioral configurations in the Yurok and in the Sioux world, we have not attempted to establish their respective 'basic character structures.' Rather, we have concentrated on the configurations with which these two tribes try to synthesize their concepts and their ideals in a coherent design for living." Erikson thus suggests, correctly in our view, that psychocultural analysis be clearly distinguished from, though functionally related to, modal-personality analysis. Though there is no reason to assume that she would reject the distinction, it is not explicitly acknowledged by Mead and is deemphasized in her research reports. Thus, her studies of Bali (Bateson and Mead, 1942), the United States (1940, 1942), and Russia (1951a) contain a wealth of characterological inferences, but these inferences are not brought together into a systematic formulation of national character in other than predominantly cultural terms.

The socially oriented clinical psychoanalysts have been somewhat more systematic in their attempts to develop a conception of personality and to apply it in the delineation of national character. However, in this group of investigators, the level of formal theory is also far from adequate. Roheim (1943b, 1947), one of the few "orthodox" Freudians in this field, has been concerned mainly with such problems as the universality of the Oedipus complex and the role played in the maintenance of culture by persisting unconscious processes derived from traumata in early psychosexual development. His emphasis on "depth" aspects of personality provides a needed corrective for the more superficial approaches often taken. But his work gives evi-

dence of the weaknesses in earlier psychoanalytic theory already alluded to, particularly the conceptual neglect of "peripheral" personality processes and of sociocultural forces.

Dicks and Erikson have remained within the general framework of psychoanalytic theory concerning psychosexual development, adult personality structure, the dynamics of anxiety, and the role of unconscious wishes and conceptions in individual and collective behavior. However, both have taken greater than usual conceptual account of cognitive-conative ego processes and of the sociocultural setting. They take the ego as a starting point for psychological analysis, considering it in relation both to underlying instinctual-moral processes and to the structure of the social environment. They may be said to have changed the older psychoanalytic approach, *the instincts and their vicissitudes*, into a new form, *the ego and its instinctual substratum*. Erikson (1950, 1958, 1964) places great theoretical emphasis on the ego's synthesizing function in developing stable conceptions—meanings, images, themes—of self, significant other individuals, and symbolic entities such as "boss" and "Mom" in the contemporary United States. His concept of *ego identity* and his theory of *stages in ego development* have considerable promise for the delineation of national character. Though Dicks has written less in the way of general personality theory, his descriptions of German (1950) and Russian (1952) character reflect a similar conception of personality.

Fromm and Kardiner represent two variants of the "neo-Freudian" psychoanalytic viewpoint. The writings of both men during the 1930's were of great importance in linking psychoanalysis with social science and in establishing the outlines of a psychosocial approach to national character. Fromm (1936, 1941, 1947) rejects the Freudian theory of sexual and aggressive instincts and of psychosexual maturation, and has become progressively more ego-centered and characterological. His descriptions deal mainly with character traits, generalized "orientations" such as "receptive" or "marketing," and two types of conscience, the authoritarian versus the humanistic. He rejects libido theory and proposes "self-realization" as the primary, maturationally given urge or instinct in human development. At the same time, Fromm continues to regard himself as being within the psychoanalytic tradition and, in practice, utilizes many Freudian motivational-developmental concepts.

Kardiner (1939, 1945b) also rejects classical libido theory and takes a heavily ego-centered approach. One of his chief concepts is the *individual security system*, that is, the modes of adapting through which the individual gains group approval and support. This concept is used as a means of linking intrapersonal needs and societal demands. Kardiner, like Fromm, retains many Freudian concepts in slightly, and often implicitly, modified form. Thus, although he rejects the Freudian theory of psychosexual development, he speaks of "oral" and "anal" adult character types and seeks their origins in corresponding periods of childhood development. The conceptual status of these presumably deinstinctivized terms remains unclear. Again, Kardiner in his formal definition (1939) proposes that the basic personality structure has four components: idea constellations, individual security system, superego formation, and attitudes toward supernatural beings. These components merit serious consideration in the development of a conceptual framework for the delineation of personality. However, they are not sufficient in themselves. They do not fully determine the organization and content of Kardiner's own analyses, nor do they exhaust the list of concepts which he in fact uses.

What is common to the various psychoanalytic approaches? We would suggest the following. Personality is conceived of as a relatively stable system organized along a peripheral-central "depth" dimension. The functional importance of any single characteristic depends on its place within the overall system. At the periphery are the more conscious wishes, beliefs, and values, and the "traits" or readily apparent modes of adaptive functioning. At various deeper levels are the ego-defensive and ego-integrative processes, as well as the less conscious drives, conflicts, and conceptions of self and others, and those more archaic forms of psychic functioning which have not been outgrown. These are placed by psychoanalysis within a conceptual framework of dynamic systems (ego, superego, id) and structural regions (conscious, preconscious, unconscious), each of which has its own content, functional properties, and role relative to the personality as a total system. The "neo-Freudian" viewpoints have modified this framework, usually in the direction of simplification and deformatization of intrapersonal analysis, but with greater emphasis on interpersonal processes.

LEARNING THEORY

A second psychological orientation widely manifested in national-character studies is what may loosely be termed "learning theory." This designation serves to cover a variety of approaches, sometimes explicitly stated but often only implicitly held. The particular learning theories we are about to discuss are in many cases not regarded by those who use them to be personality theory in the same way that Freudians consider psychoanalytic theory to be personality theory.

Among the early investigators of national character, Gorer (1950) gives perhaps the most explicit acknowledgment of his debt to learning theory, in particular, to that of Hull and his associates. He conceives of adult behavior as being generally "motivated by learned (derived, secondary) drives or wishes superimposed upon the primary biological drives" (1943, p. 108). Many of these wishes, Gorer goes on to say, are un verbalized or unconscious, since they become established following a pattern of *reward and punishment* experiences which occurred in childhood. Nevertheless, such motives and other *learned habits* are seen as uniquely combined, structured, or patterned in the national character of any societal population. It is not clear from Gorer's material, however, whether the pattern is expected to be present in *individuals* with sufficient frequency to constitute a mode, or whether it is sufficient that each discrete trait which the analyst sees as a part of the pattern be modally present in the total population.

The anthropologist Bateson (1942b, 1944; Ruesch and Bateson, 1951) has suggested that personality be described in terms of "contexts of learning" which involve interaction sequences such as dominance-submission and succoring-dependence. His formulation of these sequences also has the definite mark of stimulus-response theory. Thus, for Bateson, national character may be described in terms of the distinctive combination or the predominance of one or another of these "linkages" or interaction sequences in the modal response pattern of individuals from any given society.

Perhaps the most systematic application of learning theory has been in the work of John Whiting and Irvin Child (1953) and their associates. The work of this school has been systematically reviewed and summarized by Whiting (1961) in a publica-

tion which seeks to integrate the diverse efforts of its members. On the surface, this research seems not explicitly concerned with national character or modal personality patterns. Its declared purpose is to understand how *individual* differences arise as a result of different, culturally patterned child-training experiences (1961, pp. 16, 324). The members of this school study child-rearing practices, such as the abruptness and harshness of weaning, and then by correlational methods seek to relate the child-rearing techniques to cultural customs such as the belief that illness is caused by the ingestion of purposely tainted substances. The units of analysis are not individuals, but two sets of customs. Personality enters into the equation, however, as the intervening variable linking the two customs. Thus, in a culture in which individuals are weaned abruptly and harshly, it is assumed that anxiety concerning oral intake will develop; this anxiety, persisting in the adult, will then be expressed as a "negative fixation," for example, in the belief that illness is caused by eating magically poisoned food or by a magical oral incantation.

Several elements of Whiting's theory and method make this work relevant in the context of modal-personality research. The "customs" Whiting and Child study, such as the belief that incantations cause illness, are interpreted by them as "indices of the adult personality traits characteristic of the members of a society" (1953, p. 65). It follows that each characterization of a culture (for example, that it shows marked fear of sorcerers) is in effect a statement about modal personality. Thus, the customary fear of sorcerers in a given culture is interpreted to mean that the *typical* member of the society fears the direct expression of aggression. He must therefore strongly control his aggressive wishes, by attributing them to others or by justifying his aggressive actions on the grounds that they are directed against evil and aggressive individuals such as sorcerers (1961, p. 369).

The conception of personality used by the Whiting school is heavily influenced by psychoanalysis, while expressed in the conceptual framework of learning theory, or what they also call "general behavior" theory. The theory and the research give prime emphasis to the *developmental* aspects of personality. The most explicit focus is on childhood experience, and the conception of adult personality is only minimally stated in the writing of this school. We may, however, discern two leading ideas.

First, the adult personality is seen as being essentially a set of residues or outcomes of earlier, especially infant and early childhood, experiences. This is most explicitly expressed in the use of the concept of *fixation*. Five main drive systems are delineated: oral, anal, sexual, defense, and aggression. With regard to each of these it is assumed that an individual can have a fixation, meaning that it becomes for him a "strongly motivated basic interest." The fixation may be "positive," associated with great pleasure or satisfaction with the drive system in infancy and childhood, or "negative," following from markedly painful or unpleasant early experiences with the drive system. The fixation is then conceived of as operating as a "motive" to channel attention to a given area. Thus, oral fixation increases the probability that in a search for explanations for illness, the individual will think of the oral zone (the ingestion of tainted food or the saying of hostile incantations) rather than of factors relating to other drives. This reasoning clearly stems from the Freudian model. It is far from obvious how it can be translated into the language of traditional learning theory or that much will be added when the translation is made.

A second major element in the personality theory of the Whiting school, explicitly enunciated only in 1961, is a theory of learning by *identification*. It assumes that

we learn the role of another by interacting with him, and that in this learning the socializing agent's control and administration of resources is a crucial determinant. In later childhood, and presumably adulthood, we enact our roles in a way which reflects the earlier behavior of those who socialized us. Thus, if in childhood we were given resources mainly when we *needed* them (for example solace when hurt), then as adults we will presumably respond in the same way with peers and those dependent on us. Though the theory is not made explicit, the adult personality is presumably a "set" of such roles or dispositions formed by means of childhood identifications.

In summary, various forms of "conditioned-response" learning theory have been used in the analysis of national character. These viewpoints describe the individual largely in terms of certain *habits* and *motives* (predispositions) to respond to given culturally patterned stimuli in a culturally patterned way. The predispositions are assumed to have been *learned* in a matrix of reward and punishment, and the appropriate responses reinforced by the consistent patterning of the individual's later cultural experience. Though the learned responses are therefore presumably subject to later extinction, as well as reinforcement, little is said on the matter. Most characterological descriptions couched in learning-theory terms do not present the contemporaneous traits of the adult individual, but rather characterize him by indicating the kind of childhood training experiences he has undergone. Furthermore, for lack of a fully elaborated descriptive vocabulary, the discussions of modal personality couched in the language of learning theory tend to be thin on explicit content, the terms being chosen on a relatively *ad hoc* basis. Finally, it should be noted that these descriptions give relatively little attention to the *structure* of personality.

VALUE-MOTIVE-TRAIT THEORIES

We group together here, under a single rubric, a rather diverse set of approaches. The investigators do not comprise a "school" in the usual sense; they differ widely in disciplinary origin, in substantive theoretical interests, and in modes of empirical investigation. However, they have in common an emphasis on specific values and/or motives which form relatively enduring traits in the individual personality and which operate as important factors in societal integration and change. We shall consider other common features of this approach after reviewing briefly the work of four of its representatives: Florence Kluckhohn, McClelland, Cantril, and Morris.

Florence Kluckhohn

Florence Kluckhohn identifies a "limited number of common human problems to which all people at all times must find some solution" (1961, p. 10). The problems are: "What is the character of innate human nature? The relation of man to nature? The temporal focus of human life? The modality of human activity? The modality of man's relationship to other men?" The answer to each of these questions constitutes a *value orientation* and each problem is conceived of as permitting only a limited number of alternative value orientations. For example, in response to the question about man's temporal focus, time value orientations may give priority to past, present, or future. The activity orientations may place primary value on "being," "being-in-becoming," or "doing." The man-nature orientation may value man's subjugation to, harmony with, or mastery over nature. The theory holds that in each culture most

individuals are characterized by some dominant profile of orientations. In the United States, for example, the dominant orientations were predicted to be individualism, future time, mastery over nature, doing, and a conception of human nature as evil but perfectible. In each culture, however, there are assumed to be relatively acceptable variants on the dominant pattern. The Spanish-American culture, for example, gives strong first-order preference to the present in its time orientation, but the future emerges as a strong second-order alternative over the past.

Though Florence Kluckhohn's analysis is applied mainly to the differentiation of cultures, it is also clearly in the realm of national character. She assesses the cultural norms not by the study of institutional organization and cultural pattern, but by interviewing samples of individuals. She also acknowledges the kinship of the concept of value orientation to Kardiner and Linton's "basic personality type."

It is apparent that, at least in this context, Kluckhohn conceives of personality mainly as a set, or profile, of value orientations similar to those which characterize culture. "Each one," she says, "has within himself, *as a part of his personality*, a rank order of value orientations which usually is made apparent by a variable allocation of time and interest in the activities of the several behavior spheres . . ." (1961, p. 31). These orientations, furthermore, are presumed to be laid down in the child's socialization in a particular cultural tradition, subtly built into his total apperceptive mass through the role expectations imposed on him.

Florence Kluckhohn's work is valuable in pointing to universal psychosocial issues to which answers must be found by all societies and individuals, and in her distinction between dominant and variant modes of value orientation. For the study of national character, however, her approach requires a more inclusive conception of personality, a conception that encompasses other aspects (motivational, defensive, cognitive, etc.) as well, and that takes account of their interrelations. Her primary interest is the role of values in the integration of culture and the process of change. She does not indicate how values contribute to the integration of personality, nor does she elaborate on the more general theory of personality which guides her research. For example, she does not ask what other value orientations may be important in the personality, except for a footnote reference to the emphasis on orientations toward the self in the parallel work of Redfield and Hallowell. It would, we suggest, be consistent with her approach, and a useful extension of it, to include additional "human problems to which all people at all times must find some solution," such as the handling of aggression and others which we shall describe below.

McClelland

Like many others who study values and motives on an international scale, McClelland (1961) has been mainly interested not in the delineation of national character, but rather in showing the causal influence of particular (modal) personality variables on differential rates of national economic growth. In his view, economic growth depends in large part on the *need for achievement*. He therefore attempts to develop measures of motive which "provide at least crude estimates of group levels or differences in human motives that would be of use to economists and other social theorists in dealing with the behavior of large groups of people" (p. 39).

The approach to personality taken by McClelland and his associates has its roots in the pioneering work of Henry Murray (1938) in the assessment of personality by projective tests, especially the Thematic Apperception Test (see McClelland and

Atkinson, 1953). The presence and strength of a motive in a particular person is signaled by evidence of a preoccupation with or salience in his fantasy life of certain themes, issues, or concerns. In the case of the measure on which McClelland has focused most, the achievement motive, the signs are "thoughts of doing well in respect to some standard of good performance, of being blocked in the attempt to achieve, of trying various means of achieving, and of reacting with joy or sadness to the results of one's efforts" (1961, p. 43). The other needs to which McClelland and his associates have so far given most attention are the needs for affiliation and power.

Other than the obvious commitment to the principle that motives are an important aspect of the person and a powerful predictor of his behavior, the work of McClelland and his associates contains little elaboration of a general theory of personality. Apart from the concern with explaining economic development and entrepreneurial behavior, their interest has been mainly in solving problems in the *measurement* of motive (Atkinson, 1958). As McClelland says of this approach (1958, p. 8):

At the outset, it takes no position as to whether . . . there are certain primary (unlearned) and secondary (learned) drives, whether motives drive (provide a source of energy) or direct (release energy in certain directions), or whether they are temporary states or enduring dispositions of the organism. . . . Such a loosely empirical procedure is certain to prove confusing to those who have definite theoretical ideas as to what such terms as *drive*, *need*, *motive*, and *value* mean, but . . . the position taken here is that the decision as to which of these terms to use should depend not so much on the author's theoretical dispositions as on the measurement which provides the operational definition for the term.

This tentative, open, and empirical approach to personality has the advantage of flexibility; it permits consideration of alternative concepts and variables which may further our understanding of the problems we study. Thus, in scoring children's readers, which provide the main basis for estimating national differences in achievement, affiliation, and power motivation, McClelland (1961) has also measured 14 other psychocultural characteristics, including optimism, self-awareness, self-esteem, and impulse control. The interaction effects of these different components of the personality are evidently very powerful. Countries in which the readers, and hence presumably some significant part of the population, are high on *both* need achievement *and* other-directedness show a rate of economic development about three times as great as those low on both traits and twice that for countries high on one measure and low on the other. But McClelland and his associates have not specified any general conception of personality which would define, locate, weigh, or systematically relate these different components of the personal system.

Cantril

Cantril's approach to personality emphasizes both the cognitive-perceptive component and the motivational. This is reflected in his adoption of Polyani's term, the "appetitive-perceptive agency" of the organism. At this point we restrict ourselves to the motivational component; the other will be considered below. Cantril's (1941) theory of motivation owes much to Gordon Allport. He rejects the idea of a single source of motivation such as the reflexes or Freud's id, and affirms the functional autonomy of motives. He sees man as having the ability to experience satisfaction

through *values*, which makes the pattern of his pursuit of gratification "different from that sought by any other type of organism we know." The values propel man "to learn and devise new ways of behaving that will enable him both to extend the range and heighten the quality of value satisfactions and to insure the repeatability of those value satisfactions already experienced" (1965, p. 10). The pattern of individual value satisfactions is assumed to be laid down in childhood through the objects, people, and situations which give comfort and satisfaction, or which produce distress in the person. The individual pattern of strivings varies not only with the life history but also with the current situation of the individual. Cantril does not go very far in resolving the tension between a conception of motives as early established and deep, and one which stresses their malleability under different life conditions and situational pressures.

In his earlier writing, Cantril (1941) specified certain needs as central for all individuals, such as the needs for self-respect and for meaning. In his later work bearing more directly on national character (1965; Buchanan and Cantril, 1953), he has been hesitant to impose any standard value scheme on his respondents. He prefers, rather, that they define for themselves what is important. Accordingly, he uses open questions such as: "What are your hopes for the future? What would life have to be like to be completely happy?" The responses must, of course, be coded according to some general scheme and the codes used presumably reflect not only the answers given but Cantril's earlier and continuing theoretical concerns as well. For example, there are general code categories for concerns about "own personal character" which include subcategories such as "self-development or improvement" (in which are placed references to opportunities for independence of thought and action) and "acceptance by others" (which includes expressions of the desire to be recognized in one's status, to be liked, respected, and loved) (1965, p. 329).

Morris

Morris's approach to personality owes much to Cantril, but also includes elements which put us more in mind of Ruth Benedict. Following the theory he developed in his more philosophical and theoretical work, *Paths of Life* (1942), Morris distinguishes "three basic components of the human personality" which he labels Dionysian, Promethean, and Buddhistic. Each component is described as a "tendency" in the person, much in the sense that psychologists speak of a personality *disposition*. Dionysian refers to tendencies to release and indulge existing desires; Promethean, to active tendencies to manipulate and remake the world; and Buddhistic, to self-regulation and to holding desires in check. Whereas Benedict saw comparable tendencies in *cultures*, Morris looks for them mainly in *individuals*. And whereas she saw them as distinctive and more or less unitary wholes, Morris assumes that all three components are present in each person, and that individuals differ mainly in the relative strength of the components. Several personality *types* are then defined by their particular *profile* of characteristics. Considering the definition of the tendencies, Morris's theory might rather be thought of as focused on affective and conative modes of functioning than as primarily a value theory of personality. But he himself defines his study as part of the scientific study of values, and this seems reasonable in relation to the measures he uses, which involve expressing one's preference for 13 different "ways to live."

Summary

The above examples must suffice to represent a larger set of investigators. Despite the marked differences among them, their work is characterized by certain common features. Most striking is the restriction of attention to specific value-motive-trait aspects of personality. Theirs is almost exclusively an ego psychology which focuses mainly on the individual's orientation to his social world. The handling of sex and aggression, modes of relating to authority, and modes of cognitive and conative functioning are hardly mentioned. Clearly, values and motives are important aspects of personality, and the burden of an investigation that included a wide range of personality dimensions would be very great. However, it must be counted an important limitation of this approach that values and motives are not placed within a broader theoretical framework, and that these variables are not systematically related to other dimensions of personality.

A second feature of this approach is that each study is highly selective in its choice of values and motives to be investigated. The selection often seems arbitrary or fortuitous. Frequently, variables are chosen on the basis of interest in some problem outside the personality, such as the economic development of nations or the integration of culture. However, this leaves us in doubt as to the significance of the chosen values and motives for an understanding of personality. We get little guidance, for example, as to whether the need for achievement is a more central element of personality than is the orientation toward time.

Finally, a third and related feature of the majority of these studies is their failure to suggest how different values and motives may interact within the personality to produce either special adjustment consequences for the individual or the distinctive qualities of his performance in social roles. The individual is seemingly conceived of as a set of slots of varying number into which different particular values and motives may be slipped. These are most often considered discretely, or at best as a profile, but little is said of the possible web of relationships among the various motivational, valuational, and other processes—in short, little is said of personality *dynamics*.

APPROACHES THROUGH COGNITION

A number of important national-character studies are distinguished by emphasis on the perceptual-cognitive aspects of the personality. We have already noted Cantril's adoption of Polyani's term, "the appetitive-*perceptive* agency" of the organism, to represent the focus of interest in his research. Almond and Verba, in their six-nation study *The Civic Culture* (1963), stress "the dimension of cognition" in their description of political styles or "orientations." And Daniel Lerner's (1958) exploration of the modernization of six countries of the Middle East stresses the increasing and ever more widely diffused *rationality*, in which "ways of thinking and acting are instruments of intention, not articles of faith." The interest of these researchers in the cognitive-perceptual element of personality is also evident in their frequent use of such expressions as "people come to see that," "having the sense of," and "being aware and informed about." This orientation is reflected also in their prime reliance on the survey-type interview, though it may also be that their approach to personality is equally an *artifact* of the instrument they rely on most heavily.

For Cantril (1965), the decisive issue appears to be how the person organizes or dimensionalizes the world around him. Cantril holds that each of us, as a result of

childhood experiences, learns to make certain assumptions concerning the *significance* of objects, people, sequential happenings, actions, temporal and spatial relations, and value standards. These assumptions shape our perceptions, serving "as filters for both focusing attention . . . screening out what is apparently relevant . . . [and] intensifying other aspects of the environment which seem to have a direct bearing on purposes and aspirations" (p. 15). Though some of these "learned significances" are recognized as fleeting, others are presumed to endure for a lifetime and are then a central element of the personality. What they emphasize, and consequently how they filter or screen experience, will differentiate one individual from another, and, perhaps, one national group from another.

For Lerner (1958), the key concept is *empathy*, by which he means "the capacity to see oneself in the other fellow's situation . . . a skill in imagining oneself as strange persons in strange situations, places, and times." For him, the most adaptive person in modern societies is "the mobile personality," who is distinguished by "high capacity for identification with new aspects of his environment." Persons of this personality type are also characterized by *rationality*, or the tendency "to see the future and their personal prospects in terms of achievement, rather than heritage" (1958, pp. 48–52).

Almond and Verba (1963) refer to the subject of their investigation as "political culture," but they are using culture in the sense of "psychological orientation." They say: "When we speak of the political culture we refer to the political system as internalized in the cognitions, feelings, and evaluations of its population" (p. 14). They use this term rather than "national character" or "modal personality" mainly in order to distinguish between political and nonpolitical attitudes. The political culture is expressed in the prevalence of certain types of orientation, which they term *participant*, *subject*, and *parochial*. An individual or group is classified as one or another type on the basis of answers to such questions as: "What knowledge does he have of his nation and his political system (and) how does he perceive of himself as a member of his political system?" Almond and Verba also develop the concept of *subjective competence*, which is the belief an individual has that he can influence the political process, or the perception of his ability to exert political influence. This idea is clearly related to Lerner's (1958) concept of "personal impotency": the *feeling* that you cannot do something about a personal or communal problem linked to the *idea* that you cannot go against fate or religion. This quality is opposed to "an expectation that what one does and says will matter in the world" (pp. 100–101).

Those who emphasize the cognitive and perceptual aspect of personality do not necessarily argue that it is the most important aspect. Indeed, the term "appetitive-perceptive" favored by Cantril gives equal weight to motivation. In defining political cultures, Almond and Verba use the cognitive as only one element along with affective and evaluative orientations. Except for emphasis, therefore, it is not always possible to distinguish sharply between cognitive and value-motive research. Indeed, the general characterization of the value-motive approach presented above fits quite well the pattern of strengths and limitations of the cognitive approach.

HOLISTIC THEORIES

Our discussion of theoretical approaches should make mention of Gestalt and field theory, though neither has exerted very extensive influence on national-character research. As we noted earlier, Benedict's foremost concern was with the characteriza-

tion of cultures in terms of their values rather than with individuals or personality modes. She spoke of cultures in psychiatric terms (for example, paranoid) primarily to facilitate communication of her estimate of the essential *ethos* of the culture as a whole. To some extent, of course, she did apply her characterization of the culture she dealt with to the personality of its members. In that regard, her emphasis on the total coherence of the culture as expressed through the individual has a significant congruence with the approach of Gestalt psychology, which Bateson has also used (see Sargent and Smith, 1949, pp. 140–141).

As for field theory, its direct application to national-character study is apparently limited to Kurt Lewin (1948), though the importance of this approach to the subject has been emphasized by Murphy (1949). In his discussion of Americans and Germans, Lewin utilized his space and distance concepts primarily to characterize behavioral and attitudinal differences, but he did make some exceedingly stimulating forays in the direction of a *structural* description of *personality* in the same terms. Unfortunately, however, Lewin's application of the approach was limited, and it has not been systematically utilized in national-character studies by others.

In summarizing the role of psychological theory in national-character research, we may state that only learning theory and psychoanalytic theory have played a major role. Insofar as investigators have been concerned with *personality* theory, they have turned chiefly to psychoanalysis as a source of ideas. However, only a minority have used psychoanalysis as a relatively integrated conceptual framework. In general, social scientists have tended increasingly to consider the psychological aspects of sociocultural patterning. They have shown less concern, however, with developing a conception of human (individual and modal) personality that might be helpful in understanding how the sociocultural order exerts influence on, and is influenced by, the modal presence of certain patterned individual psyches.

THEORETICAL PROBLEMS IN THE EMPIRICAL DELINEATION OF MODAL PERSONALITY

We turn now from personality theory as such to the uses of personality theory in the empirical delineation of national character.

In order to take account of historical changes in approach and emphasis, we shall distinguish two eras of work on this problem. The first period extends roughly from 1935 to the mid-1950's. Its chief representatives are socially oriented psychoanalysts and personality-oriented anthropologists engaged in the intensive exploration of single societies by means of ethnographic and clinical methods. The second period, roughly 1955 to 1965, is characterized by a more quantitative, comparative (multisocietal) approach. After considering each period in turn, we shall offer some suggestions for a systematic approach to the comparative study of modal personality.

The above-mentioned inadequacies in formal theory are reflected in the empirical work of the early investigators. One of the most general problems was the failure to view modal personality as analytically distinct from other aspects of psychosocial analysis. Ordinarily, a society was, in this tradition, described and analyzed chiefly in sociocultural terms, that is, in terms of the normative patterning of beliefs, values, institutional practices, and interpersonal relationships, as these are observed in various spheres of collective life such as religion, the occupational structure, etc. As Kluck-

hohn (1951) and Mead (1951b) have emphasized, during the 1940's anthropologists tended increasingly in their descriptions of cultural patterning to use concepts also used in psychology. Note, for example, the concepts of "value orientation" (Florence Kluckhohn, 1950, 1961), "implicit culture" (C. Kluckhohn, 1949b), "end linkages" (Bateson, 1942b), and "themes" (Bateson and Mead, 1942; Opler, 1945, 1946). However, these concepts refer to patterning in the culture rather than in the individual personality. There were relatively few studies in which the *primary* concern was with modal personality: its nature, its determinants, and its consequences.

As a further consequence of the limited use of personality theory, many descriptions of national character were superficial and incomplete. Goldfrank (1945), for example, described Pueblo Indian personality primarily in terms of gross behavioral traits such as "fearful" and "argumentative," without regard for personal meanings and more central cognitive-motivational characteristics. The descriptions of Benedict (1934, 1946a) and numerous others also remained at a relatively concrete behavioral level and cast little light on the more enduring intrapersonal processes involved. Hallowell's (1940) analysis of the Saulteaux Indians illustrates the effects of taking a more psychological approach. In his initial study, he had observed that the Saulteaux are unaggressive and cooperative in their everyday social behavior, and had concluded that they simply lacked aggression as a psychological disposition. In his second formulation, undertaken with greater knowledge of psychodynamic theory, his observations were more sensitive and his analysis more complete. It became apparent that aggression is an important but morally conflictful disposition, and that it is expressed overtly but indirectly in the form of suspiciousness, extreme concern with sorcery, and the like.

Riesman (1950) discusses various aspects of the contemporary American scene in terms of a distinction between "tradition-directed," "inner-directed," and "other-directed" moral characters. He indicates some of the psychological characteristics of each type; for example, the other-directed individuals are concerned primarily with gaining the approval of others, their values shift easily in conformity with prevailing peer-group standards, and they respond to group sanctions with diffuse anxiety rather than shame or guilt. However, Riesman is more concerned with describing the manifestations of the three forms of "directedness" in various institutional spheres than with formulating the primary personality variables comprising each constellation. In short, though we are given numerous psychologically acute observations about American social behavior, we do not have an adequate analysis of the personality structures that in part determine this behavior.

One of the major problems in the empirical study of national character—evident in the early period as well as the present—is the lack of an explicit, standardized analytic scheme, that is, a universally applicable system of concepts and descriptive variables in terms of which modal adult personality structures can be described and compared. Even the more systematic approaches, which have achieved a broad conceptual framework, are relatively limited at the level of descriptive variables or categories. This is particularly true of the psychoanalytic viewpoint.

The lack of a standard analytic scheme is due also to the *clinical-idiosyncratic* mode of analysis commonly used by the early investigators. By and large, they did not decide in advance on the categories to be measured. The investigator preferred, rather, to immerse himself in the culture by means of reading, talking with informants, and using whatever forms of direct observation and experience were available.

In this approach, the final analysis is guided by an overall conception of personality, but the organization and the language of analysis vary greatly from one society to the next, in accord with the idiosyncratic patternings found in each.

This mode of analysis has much to commend it, particularly in the initial development of an area of investigation, when both theory and sheer information are so limited. It has contributed greatly to our understanding of national character. Nevertheless, the lack of a standardized analytic scheme creates a number of problems. For one thing, it means there is no rigorous test for the occurrence of omissions and distortions of analysis. If certain characteristics are not mentioned in the analysis, it is not clear whether they are absent in the modal personality, or are judged to be present but unimportant, or are present but have been neglected by the analyst.

Perhaps its most important limitation from a theoretical viewpoint, however, is the fact that the idiosyncratic description of single personality-culture configurations hinders intersocietal comparison and cross-societal generalization. For example, it appears that "orality" is of crucial importance in the modal unconscious fantasies and character structure in the Marquesas (Kardiner, 1939), Alor (DuBois, 1944; Kardiner, 1945b), and Great Russia (Dicks, 1952; Gorer and Rickman, 1949). "Anality" may have a corresponding role in the modal personalities in Japan (Benedict, 1946a; Gorer, 1943), Tanala (Kardiner, 1939), and Germany (Dicks, 1950, and others). To say that orality is "important" in a given adult personality is to suggest that certain wishes, expectations, anxieties, and modes of functioning have a nuclear, organizing, energizing role, and that they will strongly influence the person's social thought and behavior. There are, however, many ways of being "oral"; the aim of empirical analysis is to describe the specific nature and operation of orality in the personality being studied. Qualitative descriptions of this sort are available in the above studies. Unfortunately, the authors have not used standardized descriptive categories to convey their qualitative characterizations. This lack of a common language of analysis makes it difficult to represent systematically the similarities and differences among the various oral patterns. The same is true for issues such as anality, aggression, security system, ego identity, and other high-level abstractions. In short, even when there is comparability in the psychological issues covered, the empirical delineations of personality are largely noncomparable in the descriptive categories employed. Their theoretical value would be greatly enhanced if we had a reasonable number of descriptive categories in terms of which personalities might be at least crudely described and compared.

In addition, the absence of standardization in analysis has led to marked inconsistency in the psychological issues covered in various studies. For example, Gorer gives considerable attention to anality in the Japanese (1943) and to orality in the Russians (1949); however, he says almost nothing about orality in the first and anality in the second. It may well be that orality is not a nuclear issue in the Japanese, nor anality in the Russians; still, some reference to their operation and patterning would be most helpful for comparative purposes and would provide some assurance that they had been given serious consideration. Hallowell's (1940) experience with the Saulteaux, mentioned above, is also relevant in this connection. He has shown that aggression is to be regarded not as a simple form of overt behavior but as a disposition that has functional significance at various levels of personality. To formulate its role in a given personality, we must describe not only the direct manifestations but also the indirect expressions, the unconscious fantasies, and the mechanisms of

control. "Aggression" is thus not a single variable but a complex analytic issue under which numerous descriptive variables are subsumed.

Thus far, we have considered the merits and limitations of one approach to the empirical delineation of modal personality. This approach was initiated in the 1930's and elaborated during and after World War II. In the decade 1955 to 1965 its influence, though diminished, was evident in several major studies. For example, Narain (1957) presented a study of Hindu character based on a variety of sources including ancient religious texts such as the *Bhagavad-Gita*, as well as contemporary films and popular proverbs. The catholicity of his method is typically paralleled in the diverse elements which enter into his description of Hindu character as passive and mild, marked by pessimism and asceticism "of the masochistic and punitive variety," depressive rather than persecutory, with an id kept under very strict control, a weak ego, and an extremely strong superego.

Inkeles, Hanfmann, and Beier (1958) used interviews combined with a battery of tests including the TAT, sentence completion, Rorschach, and projective questions administered to Soviet refugees, to develop a profile of Great Russian personality. They noted certain outstanding characteristics of this sample which seemed significantly related as a syndrome, including "great strength of the drive for social-relatedness, marked emotional aliveness, and general lack of well-developed, complex, and pervasive defenses." Other qualities which seemed especially notable, particularly in relation to a criterion group of Americans, were the absence of marked emphasis on orderliness, on precision of planning, and on persistence in striving. While showing weaker needs for achievement, autonomy, and approval than did the Americans, the Russians displayed a sturdy ego, high self-esteem, and readiness to explore their own motives and feelings.

These citations may be supplemented by many others. Kaplan and Plaut (1956) utilized psychiatric interviews and a battery of projective tests to elaborate the modal personality of an American ethnic and religious minority, the Hutterites. De Ridder (1961) used the TAT to develop a portrait of the urban South African; Pettigrew (1964) drew on numerous studies to synthesize a picture of the American Negro; Hsu (1963) used family structure as a key to the analysis of character in the American, Hindu, and Chinese, and then tested some of his ideas through use of the TAT with student samples; Phillips (1965) combined field observation and the sentence-completion test to draw a portrait of peasant personality in Thailand; Gorer (1955) departed from his usual clinical and intuitive ethnographer's stance to present a picture of the English character based on thousands of questionnaires completed by newspaper readers and supplemented by systematic interviews; and Stoetzel (1955) used questionnaires, interviews, and autobiographies to check the picture of Japanese character which Ruth Benedict (1946a) had presented in *The Chrysanthemum and the Sword*.

Though there are many important differences among these studies, they share certain significant similarities. Generally, they present an effort to encompass in more or less its totality the modal personality of a major group. Their task is descriptive rather than analytical, the group being chosen because of its intrinsic interest to the researcher or because it represents some major national type or culture area. The measures used are mostly of the projective variety, and the findings from them are woven together with other materials, and with impressions based on origin or residence, to yield a complex and essentially clinical-interpretative, general portrait of the modal personality type. The personality patterns of other groups are considered

mainly as a standard permitting clearer and sharper delineation of the character of the group under study, rather than for purposes of systematic comparison in its own right. Finally, the delineated modal personality is mainly related to the culture as a whole, or to a variety of its features, rather than to some specific substructure such as the polity or economic roles.

Alongside these continuing studies representing an earlier tradition, there appeared in the decade after 1955 a substantial number of studies done in an almost entirely new style. Rather than attempt a general portrait, they usually focused on a single trait or complex. They usually eschewed impressionistic, informal observation in favor of systematic testing. The projective psychological test was fairly consistently replaced by the public-opinion poll type of survey. No longer focused on a single nation or group, these studies generally dealt with a set of nations at one time in an explicitly comparative design. The small, special, and often markedly unrepresentative samples of the past were replaced by large and often representative samples drawn from the entire national population. And rather than relate their findings to the culture or society as a whole, the authors of these new studies generally restricted their evaluations of the importance of the designated personality traits to a limited segment of the social structure, to a particular set of roles, or even to a single status such as that of entrepreneur. As LeVine summed up the trend in 1963, studies in "group" personality are now "virtually a residual category." "In the newer studies," he continued, "it is the *relationship* between personality and some other variables which is the focus of analysis rather than the characterization of the group personality itself" (p. 123).

Though these new-style studies did not in most cases set out to describe group personality patterns, they in fact constitute a major resource for doing precisely that. In using them we must accept their self-imposed restriction of attention to a particular aspect of personality largely determined by their theoretical interest in a selected element of social structure. It by no means follows, however, that an approach to personality shaped by interest in some specific social problem must necessarily yield a thin or impoverished description of modal personality. For example, Almond and Verba (1963), in their study of attitudes and values generating the civic culture, produced the following complex portrait of the Italian character (pp. 402-403):

The picture of Italian political culture that has emerged from our data is one of relatively unrelieved political alienation and of social isolation and distrust. The Italians are particularly low in national pride, in moderate and open partisanship, in the acknowledgement of the obligation to take an active part in local community affairs, in the sense of competence to join with others in situations of political stress, in their choice of social forms of leisure-time activity, and in their confidence in the social environment. . . . Italian national and political alienation rests on social alienation. If our data are correct, most Italians view the social environment as full of threat and danger.

Whatever the description of modal personality in these studies may lack in depth or complexity is compensated for by the greater precision of measurement, by the larger, more representative samples studied, and, perhaps most important, by the opportunity for a strictly comparative analysis which permits us to see the characteristics of one national or ethnic group in relation to others.

Probably the pioneer of such postwar comparative studies, and in many ways the model for many which came later, is the UNESCO-sponsored *How Nations See Each Other* by Buchanan and Cantril (1953). Carried on in nine countries more or less simultaneously, this research was designed mainly to assess the mutual stereotypes each nation held of itself and the others. In the course of the investigation, however, attitude-value-perception scales were developed on such dimensions as "sense of personal security" and degree of optimism or fatalism; the resulting data were used for quantitative comparison of several national populations. This procedure seemed justified because the items which composed the attitude scales held together in basically the same way in each of the countries. Optimism was much more prevalent in the United States and Australia than in Italy or Mexico, where there were decidedly more fatalists. A basically comparable approach, this time focused on "human concerns" for oneself, one's family, and one's country, was adopted by Cantril (1965) in his 14-country study, though that investigation yielded fewer measures which might properly qualify as statements about modal personality.

The samples for Lerner's study of six middle-Eastern nations were chosen not primarily to represent their respective populations, but rather to represent certain social groups selected mainly on grounds of their communication behavior. Nevertheless, if we assume that the group low in education, rural in residence, and little exposed to the mass media—whom Lerner calls the "traditionals"—is most typical of each country and broadly comparable from nation to nation, then the classification of his respondents permits systematic cross-national comparisons. The Turks consistently emerge as more modern than the citizens of Iran; they less often show a sense of "personal impotence" and more commonly have "empathic" ability.

Charles Morris's (1956) comparative study of national character was limited to student samples. While recognizing that this might yield an exaggeratedly homogeneous picture, he nevertheless concludes that there are substantial national differences. Using the four basic factors which emerged from the factor-analytic study of his "paths of life" value test, he developed comparable profiles for the several national groups. Thus, the American students emerged as "the most activist and self-indulgent, less subject to social restraint and less open to receptivity than any of the four other groups, and second lowest in inwardness." By contrast, the Indians had a very high score on the factor on which the Americans scored lowest. They were characterized by strong emphasis on social restraint and self-control, stood second highest on the factor which measured withdrawal and self-sufficiency, and in the same rank on that which measured receptivity and sympathetic concern. The other student groups from Japan, China, and Norway each, in turn, produced its own distinctive pattern on the four-factor profile.

Using a combination of the questionnaire and the coding of an autobiographical essay, Allport and Gillespie (1955) studied differences in youth's outlook on the future in 10 countries representing 12 different cultures. Their method and theoretical orientation bears important resemblances to those of Morris and Cantril. Florence Kluckhohn (1961) administered her value-orientation test to samples from five culture groups living in the American Southwest—Navaho, Zuni, Spanish-American, Mormons, and Texans—and developed comparable profiles for each group on her five value-orientation dimensions. The test has since been used in a study of the Japanese by Caudill and Scarr (1962) and is being applied in other countries. David McClell-

land (1961) rated more than 30 countries on the strength of needs for achievement, affiliation, and power, as well as on the degree of other-directedness, using children's readers as the indicator of the strength of these qualities in the respective parent populations. He also used TAT-type stories to assess individual need-achievement scores for students in six countries and for business managers in four.

So we see the burgeoning of a new type of study which may soon permit us to develop composite national modal-personality descriptions based on large samples. This research would yield rather strict comparative statements about the *relative* strength of particular components in different national groups and thus about what is distinctive, as well as what is common, in the personality patterns to be found in various nations.

At the same time, it is evident that the choice of personality variables for inclusion in these recent studies is ordinarily not made on the basis of a systematic framework of personality theory. Each investigator selects a few variables in which he is particularly interested, or for which quantitative measures are available. The need remains for a more inclusive, standardized, and theoretically comprehensive analytic scheme in terms of which modal personalities can be described and compared cross-nationally. We turn now to a consideration of the problems involved in this effort, and an approach to their solution.

A SUGGESTED APPROACH. STANDARD ANALYTIC ISSUES

The quest for a standardized analytic scheme brings with it new problems. A workable scheme can hardly contain more than 30 or 40 categories. We do not yet have an adequate basis in personality theory, and certainly not in empirical knowledge, for producing a set of variables sure to have universal applicability and significance. And, in any case, a scheme which is limited to a relatively few, universally relevant variables would necessarily omit much that is important in any one society.

National-character research is thus faced with a dilemma central to current personality research generally. A standardized analytic scheme can, at its best, add to the technical rigor and theoretical value of our investigations. Premature standardization, on the other hand, may seriously impair the flexibility and inclusiveness of analysis, and at its worst leads to rigorous measurement without concern for the theoretical meaning or functional significance of the variables measured. Various partial resolutions of the "standardization" dilemma have been proposed; see Cattell (1950), Eysenck (1947), Henry (1947), Kluckhohn, Murray, and Schneider (1953), and Rosenzweig (1951). The proposals to be made below derive most directly from the work of Adorno *et al.* (1950) and of Frenkel-Brunswik (1942, 1948a, 1948b).

One promising approach is to concentrate, for purposes of comparative analysis, on a limited number of psychological issues, such as "aggression" or "orality," that meet at least the following criteria. First, they should be found in adults universally, as a function both of maturational potentials common to man and of sociocultural characteristics common to human societies. Second, the manner in which they are handled should have functional significance for the individual personality as well as for the social system, in that their patterning in the individual will affect his readiness to establish, accept, maintain, or change a given sociocultural pattern. A further task, one that will take longer to carry out, is to develop a set of descriptive

categories for the empirical analysis of each issue. Modal personalities can then be described in terms of the presence or absence, and the patterning, of the various categories. The use of formal categories need not, and indeed should not, exclude a more idiosyncratic, clinical analysis; they are essentially an ordering device to facilitate cross-societal comparison and the determination of generalized relationships between modal personality and the sociocultural system. Moreover, if the categories are to be psychologically meaningful, they must be relatively complex, and their assessment will therefore require some interpretive skill. This in turn requires that the bases for interpretation be clarified and made explicit, and that evidence of adequate inter-rater agreement be obtained. Such an approach makes use of clinical assessment procedures but attempts to formalize the descriptive concepts and to meet appropriate requirements of measurement.

The formulation of a single, "most important" set of analytic issues is a difficult matter. Nevertheless, there are a number of issues that would probably be regarded by most current investigators as meeting the criteria of significance mentioned above. We shall discuss only a few of these to illustrate the general problems involved (*cf.* Aberle, 1951, pp. 118-123).

Relation to authority

The issue, relation to authority, meets our criteria of universal psychosocial relevance. All children developing in a society are dependent on older figures (persons and, usually, psychologically real supernatural agents) who provide gratifications conditionally, who exert impulse-controlling and value-inducing pressures, and through whom self and world acquire increasing meaning. The adult social world also inevitably contains status differentiations and authority figures of some sort—figures who represent power, morality, mastery, and the like.

Viewed as an aspect of personality, the individual's relation to authority includes at least the following aspects: (1) his ways of *adapting behaviorally* in interaction with authority; (2) his personal *ideology*, that is, his beliefs, values, and attitudes regarding authority and authority-subordinate relations; (3) the more central *fantasies, defenses, and conceptions* of authority and self that underlie and are reflected in his behavior and ideology. The relationships among these aspects are complex. Two individuals may show notable similarities in attitude and yet differ appreciably in their unconscious wishes and fears concerning authority. Again, an individual's modes of adapting to authority may be at variance with his conscious attitudes and may shift in accord with situational pressures or with changes in inner-defensive equilibrium. Finally, "authority" is not a single, undifferentiated psychological entity. Every person explicitly or implicitly distinguishes and symbolizes various kinds of authority, for example, legitimate-illegitimate, feminine-masculine, arbitrary-rational, benign-malicious. Given these distinctions, the individual's behavioral adaptations, attitudes, and motivation-defense involvements are likely to vary considerably from one type of authority to another. An adequate analysis must consider all of these.

From a cultural point of view, it may be sufficient to consider only the value attitude and the gross behavioral aspects of the relation to authority. And indeed, consistent, psychologically meaningful description of these characteristics in various societies would be of value for comparative purposes. However, we enter fully into

the realm of national character only when we place these within the context of modal *personality* and relate them to other, motivational and cognitive, characteristics.

This last step is frequently overlooked. For example, Mead's study of *Soviet Attitudes Toward Authority* (1951a) is concerned in part with "relationships between character structure and social structure." Her analysis provides an interesting though incomplete picture of the "socially required" ways of thinking and adapting in the realm of authority. It does relatively little, however, to specify the content and structure of the modal *personality* types and their role in the production, maintenance, and change of institutionalized authority patterns. This has been attempted in the exploratory case studies of the Soviet elite by Bauer (1953).

The general theory of authoritarian versus equalitarian personality syndromes has been used as a context for several psychological analyses of relations to authority. The earliest formulations are those of Fromm (1936, 1941) and Reich (1945), and deal mainly with Germany. Erikson (1942) utilized similar concepts in discussing the modal personality represented in German Nazism. He suggests, for example, that the "good" Nazi authority is conceived of as a youthful, aggressive, older brother who leads a rebellion against the tyrannical but essentially weak paternal authority, and that the aim in rebelling is to establish not equality but a truly invincible authority and a rigid social hierarchy. Dicks (1950) and Levy (1948), in postwar German studies, found evidence of contrasting authoritarian and equalitarian types as well as an intermediate, heterogeneous group. Corresponding, though by no means identical, variations in personality structure have been found in Russia by Dicks (1952) and Mead (1951a), in the United States by Adorno *et al* (1950), Bettelheim and Janowitz (1950), and others, and in Sweden by the UNESCO Tensions Project (Klineberg, 1950). A relatively authoritarian pattern appears to be the dominant mode in numerous societies such as Japan (Benedict, 1946a; Gorer, 1943), Tanala (Kardiner, 1939), Alor (DuBois, 1944), and Saulteaux (Hallowell, 1940). American patterns of relation to authority have been discussed by Bateson (1942a, 1942b), Erikson (1950), Fromm (1947), Hofstadter (1965), Gorer (1948), Lipset (1960), Mead (1940, 1942), McClosky and Schaar (1965), Parsons (1949), Riesman (1950), and others. Focused, on the whole, upon equalitarian aspects of American authority relations, these studies have also pointed out important propensities in many Americans for extreme submission to external authority.

Apparently, authoritarian personality theory has sufficiently general applicability to provide at least a partial framework for cross-societal analysis of relation to authority. One of our immediate needs in this regard is to achieve greater differentiation of descriptive categories and greater standardization of analysis. Dicks (1950, 1952), for example, found a modal authoritarian structure in both his German and his Russian samples. But the categories and qualitative descriptions comprising the two analyses are not entirely comparable, so that his reports tell us less than they might about the similarities as well as the differences between these two groups. Erikson's (1950) analyses of Germany, Russia, and the United States have the same limitation. Moreover, many of the existing analyses of the authority issue, for the United States and elsewhere, are relatively incomplete in their coverage of the psychological aspects involved. Nevertheless, the problem of relation to authority has been considered in a sufficient number of societies so that, were the material collated, the beginnings of a "comparative national-character approach" could be developed.

Conception of self

The inclusion of this issue in a standardized analytic scheme is justified by its universal applicability and its relevance to a variety of personality theories. An individual's conception of himself is ordinarily many-sided and internally contradictory. To determine and interrelate its many facets is no small undertaking. We need to know which facets of the self conception are unconscious; which facets are conscious and how they are regarded (for example, with pride, resignation, guilt, or casual acceptance); what the person thinks he is, what he would like to be, and what he expects, eagerly or anxiously, to become. Pervading the overall conception of self will be the individual's concepts of masculinity and femininity; his values, in the form of both moral prohibitions and ideals; and his modes of dealing with inner dispositions and with external opportunities and demands.

Conception of self is a central issue in Gillin's (1948) discussion of *internal* as against culturally provided but *external* security systems (Gillin and Nicholson, 1951), in Riesman's (1950) dichotomy of inner- and outer-directed orientations, and in Mead's (1947b) description of the "situational" type of personality arising under conditions of rapid culture change. The most extensive and systematic approaches to this problem in national-character perspective, however, are provided by Erikson and Kardiner. By viewing *ego identity* as a product and at the same time a functional constituent of the ego, Erikson (1950) places it within the overall psychoanalytic theory of personality structure and development. His formulations not only advance ego theory but also reduce the gap between "individual" and "social" psychology. Kardiner's (1939) concept of *individual security system* refers, in the most general sense, to the self characteristics, such as modes of impulse control and social adaptation, by means of which the individual strives to achieve a secure, meaningful position in society and a correspondingly meaningful inner identity. Kardiner's own focus is mainly on specific self characteristics as adaptations to group pressures, and he does not elaborate the "identity" aspect as Erikson does. Both, however, contribute to our understanding of the ego and of ego-society relationships.

There are two other issues which for present purposes we subsume under the more general rubric of "conceptions of self," though they might better be assigned independent status as issues. These are the *bases for maintaining inner equilibrium* and the *major forms of anxiety*. The question posed by the former is: What must the individual do or be in order to maintain a sense of well-being? For example, in Bali, according to Jane Belo (1935), a prime requirement is to have "balance." This involves extreme inner control over impulsivity, grace in expressive behavior (posture, gesture, decorum), and well-nigh continual concern with one's position in the world geographically, religio-cosmologically, and socially. That the emphasis on balance has important defensive (anxiety-controlling) functions, though it is by no means to be regarded as "merely" defensive, is shown by Balinese myths and festivals (Bateson and Mead, 1942). In other societies there are various other requirements, for example, material success, intellectual achievement, adherence to tradition, demonstrations of potency, and so on. Clearly, these "inner equilibrium" requirements are related to the cultural values. In our opinion, however, in the study of national character they should not be deduced from the values but rather should be determined through the study of individual personality dynamics, viewed within a sociocultural setting.

Closely related to the problem of inner equilibrium is that of the *major forms of anxiety*. The term anxiety, as used here, refers to the experience, often unconscious, of threat to the ego structure. The paradigm for this issue may be stated as follows: "If I do (or think or feel) X, the consequence will be a painful, disrupting experience, Y." The X events ordinarily involve unconscious, value-violating impulses or conceptions which conflict with a restrictive morality. These are to be seen in relation to an external social context which, in varying degrees, intensifies the anxiety-laden tendencies, punishes their expression, and at the same time provides the individual with anxiety-resolving supports. Though not focused on the problem of anxiety, Mead's (1940) discussion of cultural surrogates provides a stimulating description of a range of childhood training patterns that might well be expected to yield marked differences in the potency of different stimuli for arousing anxiety.

Our primary concern here, however, is with the Y aspect of the total phenomenon, that is, the nature of the expected consequences of value violation. What are the major forms of anticipated ego-threatening experience with which modal personalities may be differentially preoccupied? We shall suggest only a few leads in this direction: total disintegration; oral incorporation; withdrawal of love; devaluation by loved other; public shaming, that is, devaluation by others who represent forms of support other than love; isolation from ingroup; "flooding" of the ego by one's own unaccepted impulses; castration; and guilt, that is, various forms of aggression against the self from a strongly internalized superego. These categories are in part overlapping and are by no means mutually exclusive. It is sometimes difficult to decide which few are the "primary" anxieties, since many may be present to some degree. Nevertheless, the standard use of a list such as this one would be of value in the comparative analysis of national character.

Primary dilemmas or conflicts, and ways of dealing with them

It may be possible to organize the formulation of any given personality in terms of one or a few primary dilemmas. This would be fruitful if such dilemmas existed widely but differentially, and if they served as nuclei or primary bases for personality structuration. Murray's concept of "unity thema" (1938) is relevant here, referring as it does to the individual's conception of what is most problematical in life and to his major attempted resolutions of this problem. According to Kardiner and Ovesey (1951), the two central, interrelated problems of American Negro modal personality are the control of aggression and the maintenance of self-esteem in the face of both familial and communal devaluation, restriction, and nonsupport; and they describe various ways in which these problems are handled. Though this concept was not used by Bateson and Mead in their study of Bali (1942), their findings suggest that a central dilemma in male Balinese personality involves the expression versus inhibition of intense affect, both aggressive and sexual, toward the attractive but threatening female.

Erikson (1950) provides a potentially useful framework for "dilemma" analysis in his formulation of stages in ego development, each stage being conceived as a dilemma or conflict between two polarities. Of particular relevance here are the successive childhood dilemmas of trust versus basic mistrust, autonomy versus shame and doubt, initiative versus guilt, and industry versus inferiority; also, the adolescent dilemmas of identity versus role diffusion, and intimacy versus isolation. An individual may resolve a given dilemma reasonably well during the period or "stage"

in which it is maturationally appropriate, and in the process achieve character traits, values, and adaptive modes that will contribute to his further development. To the extent that the dilemma remains unresolved, however, it continues in a relatively primitive form and has various consequences for the individual's further adaptive-defensive-productive characteristics. Thus, although the eight dilemmas follow a developmental sequence, adult personalities can be characterized with regard to those earlier dilemmas that are currently operative in unresolved form. Indeed, one of the chief advantages of these and other psychoanalytic "dilemma" concepts is that they have both contemporaneous adult relevance and developmental (childhood and adolescence) relevance.

The above list of issues might, of course, be very substantially extended. For example, *modes of cognitive functioning, styles of expressive behavior, and the handling of major dispositions* (such as aggression, dependency, curiosity, and homosexuality) would be placed high on the list of strategic issues by many. However, rather than attempt an exhaustive list of such issues, we wish merely to suggest the lines along which further work might go. For further discussion of these issues, and of the general theoretical problems involved, see Inkeles and Levinson (1963), Inkeles (1963, 1966b, 1968), and Phillips (1965).

Though we have identified a number of important issues, we have not been explicit as to the descriptive categories which might be used in analyzing the data relevant to those issues. In our opinion, it is too early to establish a definitive set of categories, or even to specify the full range of cultural variation with regard to any issue. We do assume, however, that agreement on a restricted number of critical issues is now possible, and that if such agreement were used as a basis for the development of widely applicable categories, the comparative study of modal personality would be greatly facilitated.

METHODOLOGICAL PROBLEMS IN THE ASSESSMENT OF MODAL PERSONALITY

Three broad types of procedure have been utilized, singly or in combination, in the assessment of national character: (1) *personality assessment* of varying numbers of individuals studied as individuals rather than through the behavior of the group as a whole; (2) psychological analysis of *collective adult phenomena* (institutional practices, folklore, mass media, and the like), on the assumption that the posited personality characteristics are modal in the population; and (3) psychological analysis of the *child-rearing system*, with the aim of inferring or determining the personality characteristics it induces in the child and, ultimately, in the next generation of adults. Let us consider each of these methods in turn.

PERSONALITY ASSESSMENT OF INDIVIDUALS

In our discussion of the definition of national character, we suggested that personality study of numerous individuals is, in principle, the most legitimate means of determining modal personality characteristics and their patterning. To do this adequately, even in a relatively small and undifferentiated society, is clearly an enormous task. It involves all the sampling and procedural problems of survey research, plus additional problems of obtaining and analyzing personality-relevant material. National-

character research is thus faced with an old but still widespread dilemma. Extensive, technically rigorous study of a large sample within a feasible number of subject and personnel man-hours increases our ability to generalize, but limits the number and "depth" of the variables that can be investigated. On the other hand, intensive clinical study of a small sample permits a psychologically more significant and complex analysis, but the generality of its findings must be established by large-scale investigation.

Though the "extensity-intensity" dilemma has by no means been solved, a number of lines of compromise and partial solution have been attempted. One major development is the use of brief clinical assessment procedures. These procedures reduce the amount of time required for each case, and have thus permitted investigation of at least moderate-sized samples of about 50 to 100 cases.

Projective techniques have played perhaps the most notable part in this development, which is so broad that we can attempt only a sketchy account of the work done. For a review of the literature on projective techniques in cross-cultural research, and of the methodological problems involved, see W. Henry (1961), Lindzey (1961), and several chapters in Hsu (1961b).

The Rorschach Test has been used in studies by Hallowell (1940), Oberholzer in a remarkable "blind" analysis reported in DuBois' book on Alor (1944), Wallace (1952a, 1952b), Louise and George Spindler (1961), Kaplan (1954), Joseph, Spicer, and Chesky (1949), Joseph and Murray (1951), and DeVos (1961).

The Thematic Apperception Test was used as the primary basis for deriving modal personality types among the Hopi and Navaho by Henry (1947), and among Japanese-Americans by Caudill (1952), who makes a noteworthy attempt to define *several* modal patterns and to understand them as variant resolutions of common problems. Beaglehole and Ritchie (1961) develop and apply an approach combining the Rorschach, the TAT, and clinical-observational methods of developmental study, in their work on the Maori. Multiple techniques were also used by Inkeles, Hanfmann, and Beier (1958) in an analysis of Russian modal personality and political participation.

Of the various studies of children's play, those by Bateson and Mead (1942), Henry and Henry (1944), Levy (1939), and Roheim (1941, 1943a) may be cited as examples. Briefer paper-and-pencil techniques of the sentence-completion variety have been used in postwar German studies by Levy (1948), McGranahan (1946), and Schaffner (1948), among others; Phillips (1965) has used the sentence-completion test in a study of Thai personality and provides a valuable review of research problems and findings.

Projective techniques constitute one form of standardized personal document. The use of personal documents in psychology has been discussed by Allport (1942), and in social science by Gottschalk, Kluckhohn, and Angell (1945). Personal "life-history" documents were used by Allport, Bruner, and Jandorf (1941) in a study bearing on German national character.

Dreaming is a universal phenomenon, and the systematic study of dreams holds great promise for cross-cultural research. The theoretical and methodological issues involved, and the relevant literature, are discussed by D'Andrade (1961), Eggan (1961), and Honigmann (1961).

The *semistructured clinical interview* is another assessment procedure that holds considerable promise for national-character research. Taken literally, the protocol

yielded by such an interview provides information about social conditions (as in the customary ethnographic use of "informant" interviews) or about the subject's surface opinions, attitudes, and values. Analyzed interpretively, however, it permits a variety of inferences concerning the person's less conscious wishes and conceptions, his modes of cognitive and adaptive functioning, and other structural-dynamic characteristics. Its systematic application in research is illustrated in the work of Adorno *et al.* (1950), Murray and Morgan (1945a, 1945b), and the Office of Strategic Services (1948). Problems of interviewing in alien cultures are discussed by Carstairs (1961) and Lerner (1961).

The use of the clinical interview in modal-personality research is well illustrated in the study of American Negroes by Kardiner and Ovesey (1951), whose 25 subjects were given "psychoanalytic interviews" ranging in number from 10 to over 100. Various methodological weaknesses of this study leave room for question concerning the validity of its findings and the degree to which they can be generalized. It should be noted, however, that Kardiner and Ovesey present a psychologically meaningful portrayal of *modal* Negro personalities of a quality not previously achieved in many sociological and socio-psychological studies. For a review of literature on Negro personality see Pettigrew (1964).

The semistructured clinical interview was the primary technique used in Dicks's investigations of Germans (1950) and Russians (1952). Dicks's work points up one special advantage of the clinical interview over most projective tests, namely, that it casts light not merely on the psychological properties of the person but also on the differential expression of those properties in various spheres of social life.

The studies cited in the foregoing discussion have one methodological characteristic in common: assessment techniques applied to a series of individual subjects provide the *primary* evidence from which modal personality structures are derived. However, these studies vary considerably in the kinds of secondary evidence considered, and in the *analytic procedure by which the total evidence* (observations, ethnographic material, test protocols, etc.) is *transformed into "modal personality" formulations*. The simplest method is to apply only a single technique, to analyze the resulting protocols by means of a standardized scoring scheme, and to derive modal personality characteristics and patterns through statistical analysis of the distributions of individual scores. This method is perhaps the best one from the point of view of reliable, replicable measurement. However, its value at the present time is limited, particularly when the analysis leans heavily on a set of concrete scoring categories. Thus, Kaplan (1954, 1961a) used Rorschach scores in a relatively uninterpretive manner and then found difficulty in arriving at psychologically meaningful generalizations. On the other hand, Dicks (1950) and the authors of *The Authoritarian Personality* (Adorno *et al.*, 1950) applied more interpretive scoring categories to their interviews and were able to use simple statistical procedures fruitfully as a basis for generalization.

The analytic procedure ordinarily used in clinical, individual-centered research on modal personality is approximately as follows. (See Caudill, 1952; Henry, 1947; and Kardiner and Ovesey, 1951, for three variants of this procedure.) The investigator first attempts to "understand" his individual subjects, that is, to formulate for each case the significant personality characteristics and their interrelations. He is guided in this by certain general interpretive principles but does not restrict himself to a formal scoring procedure applied routinely to all cases. He then derives com-

mon or, less frequently, modal characteristics and patterns from a consideration of his total series of individual case analyses. This last analytic operation, transforming a series of individual descriptions into a formulation of what is modal for the sample, is a highly complex one. It does not ordinarily involve any statistical procedure, even something as simple as counting the frequency of various characteristics singly or in syndromes. In other words, it is not a *composite derived statistically* from distributions of individual scores. The modal personality is, rather, a hypothetical *reconstruction* of a common structure posited interpretively from a series of individual patterns.

This approach has a number of methodological ambiguities, both in the assessment of single individuals and in the reconstruction of modal personality structures. Moreover, the analysis solely in terms of qualitative patterns makes it difficult to determine the degree to which the individual members approximate the modal type. Ideally, we must determine not only what is modal, but also the degree and varieties of individual variability. Until we can do this, we run the risk of spurious homogenization, that is, of exaggerating the uniformities in our formulations of national character.

Despite its limitations, however, this clinical approach has provided an initial basis for dealing with a tremendously difficult problem. The immediate task, it would seem, is to supplement rather than replace the highly intuitive assessments and constructions with more formal procedures. The psychologist can play an important part in this process by developing more adequate means of obtaining, analyzing, and generalizing from personality-relevant material on large numbers of individuals. (For an example and a general discussion of these problems, see Gladwin and Sarason, 1953.)

Insofar as more formal procedures are used to gather and analyze personality data from large numbers of individuals, increasing attention should be given to problems of sample size and composition. Most of the psychological research on national populations based on the study of individuals has utilized such oddly composed samples that it is often unclear to what parent population, if any, the sample characteristics have reference (*cf.* Chapter 17). In addition, an apparent unconcern for sampling problems is evident in many studies of national character, despite frequent references to the virtues of carefully drawn and large samples.

In the last decade there have been a growing number of more strictly comparative studies of fairly well-sampled national populations. Most of these studies were not explicitly concerned with national character, but rather were designed to explore discrete problems such as national stereotypes or communication patterns. In the course of these studies, however, the researchers devised various indices and scales which serve as measures of individual personality and are therefore relevant to the assessment of national character. Several such investigations have been noted in the earlier section on theoretical approaches.

In one of the earliest studies, which in many ways was pioneering, Buchanan and Cantril (1953) studied the population of nine countries for UNESCO to explore how nations see each other. But in the course of studying the content of national stereotypes they used measures which we may define as testing optimism and pessimism. In keeping with impressions derived from more clinical intuitive investigations, Cantril and Buchanan discovered that the sample from the United States was far and away the most optimistic, France the most pessimistic among the Western nations. These conclusions were later supported in an independent comparative

analysis of industrial nations undertaken by Inkeles (1960). Daniel Lerner (1958), in his study of several countries in the Arab world, devised a scale of *empathy*, defined by him as the ability to put oneself in the role of the other, particularly in the role of leading political figures. Though all the countries shared broadly the same religious and cultural heritage, there were marked differences in degree of empathic ability in the different national groups.

Almond and Verba (1963), studying the "civic culture" of six countries, devised an index to measure the sense of civic competence, the feeling that one understands local politics and can effectively do something about it. The countries with the more formal and long-term democratic tradition, England and the United States, had the highest proportion of citizens with a strong sense of civic competence. Other studies attempting similar national comparisons are being conducted by Cantril (1965) on hopes and fears for the future, and Inkeles (1966a) on the modernization of attitudes in developing countries.

While these studies have largely resolved the sampling problem commonly met in the earlier, more clinically interpretive studies, they are themselves subject to criticism on other grounds. Some question may be raised as to how far such indices as "optimism" and "sense of civic competence" are, properly speaking, aspects of personality. In our view (Inkeles and Levinson, 1963), the attitude-value complex which most of these measures treat is definitely part of the personal system, broadly conceived. Whether it is as important as other more "deep-lying" parts of the personality is a theoretical and empirical issue not easily resolved. One test of relative importance is the ability to predict other variables, preferably behavioral.

In any event, there is no reason why sample studies of national populations need restrict themselves to measures which treat only of the more "superficial" aspects of personality. The Authoritarianism (*F*) Scale, which has been extensively validated by clinical procedures, has been successfully administered in a number of countries, and the items in the scale appear to cohere much in the same way as they did in the United States. The TAT was administered to a national sample in the United States and without great difficulty could be scored for need achievement, need affiliation, and need power. Presumably it could equally be used in other countries. Indeed, LeVine (1966) has made a most interesting comparison of three main tribal groups in modern Nigeria, using a psychological coding of open-ended questions. He obtained results very much in accord with predictions based on extensive field study of the three cultures.

We do not mean, however, to minimize the difficulties facing those who attempt to apply attitude and value tests cross-nationally. As Duijker and Frijda (1960, p. 60) succinctly state the problem:

Translation is . . . necessary, and it plays havoc with standardization. Re-standardization of the translation to all practical purposes results in a new inventory, and comparability is lost. Standardization would result in the disappearance of just those differences one is looking for.

Despite this realistic challenge, we find that a substantial number of measures do seem to cohere psychologically and statistically sufficiently well to hold open the possibility of explicitly comparative studies using standard instruments. The impact of cultural differences on a particular item or scale may be greatly muted by the use of longer,

hence more reliable, scales, and by the use of a battery of measures rather than a single test of each dimension. This multitest strategy also has the virtue of providing a more complex and subtle statement of the model personality types (see Inkeles, Hanfmann, and Beier, 1958).

A more serious challenge to the concept of national character emerges from these sample survey studies: they give evidence of *intranational* differences which are at times as large as or larger than the observed *international* differences. These results point to the presence of multiple personality modes which on theoretical grounds we would expect in most large-scale populations. To posit such multimodal patterns is not to assert, however, that the particular characteristics which are modal, the height of the peaks, and the pattern of the modal structure are not distinctive in particular national populations. Similarly, it may well be that intranational groupings, such as intellectuals or workers, have more in common psychologically with groupings of the same status in other nations than they have with their compatriots of higher status (Inkeles, 1960). In short, we suggest that the comparative study of nations, and the comparative study of major strata and groupings within and between nations, be encompassed within a single theoretical framework (see Kahl, 1968).

STUDY OF COLLECTIVE ADULT PHENOMENA

A second major method in the study of modal personality is the analysis of collective adult phenomena: political behavior, institutional practices, religious idea systems and rituals, art forms, mass media, and the like. This method has predominated in the research carried out by anthropologists and by psychoanalytically oriented clinicians using ethnographic materials provided by anthropologists. It merits more detailed consideration than is possible here. We shall attempt merely to indicate its general advantages and limitations, and to give examples of its application.

Collective documents

Let us consider first the analysis of collective documents, that is, statements distributed orally or in writing throughout major segments of the society. These include folktales, religious works, popular magazines, movies, and so on. There are a number of studies in which the analysis of such materials provided the primary basis for the derivation of personality modes, though in most cases the investigator had additional secondary evidence from his own experience and from other studies to guide his analysis.

The following examples will suffice to indicate the variety of phenomena and analytic procedures: Wolfenstein and Leites (1950) on American and other movies; Kracauer (1947) and Bateson (1943) on German movies; Erikson (1950) on a single Russian movie and on *Mein Kampf*; McGranahan and Wayne (1948) on German plays. There are numerous psychoanalytic studies of religious myths, rituals, and doctrines, for example, Freud (1938), Fromm (1931, 1941), Kardiner (1945b), Reik (1951), and Roheim (1943b); see also Chapter 16. McClelland (1961) uses children's readers as reflections of the importance of need achievement and other motives in child rearing and, by inference, in the modal personality of the subsequent generation of adults. Thorner (1945) offers a psychological analysis of certain features of the German language, and Hymes (1961) gives a wide-ranging analysis and review of literature on

language and modal personality. Devereux and LaBarre (1961) provide a thorough review of the literature on the psychocultural analysis of art and mythology.

To the extent that documents are "popular" or are congruent with what is known of the formal social structure and culture, they are *in some sense* representative of the collectivity and they can legitimately be expected to yield insights concerning common psychological processes. However, the psychological characteristics expressed in these documents may correspond only partially to the characteristics which exist modally in the members of the society. Traditional documents such as myths or religious doctrine may have little meaning for the present populace, or they may be attributed special meanings not apparent from their literal content. Currently produced documents such as movies or popular fiction may be more indicative of the personalities of the elite who produce them than of the broad consumer public (*c/* Farber, 1950, 1953).

It is, of course, true that if such a product is to have wide appeal, it must to some degree reflect important sentiments, values, and fantasies of the consuming public. However, the possibility of "slippage" must be considered. A popular movie, or type of movie, may offend a large segment of the population; different groups may enjoy different aspects of it, or the same aspects but for different reasons; and a great variety of popular movies may leave unrepresented some of the most important psychological characteristics of the national population. Erikson's (1950) analysis of *Mein Kampf* provides significant insights into German authoritarianism, but offers no suggestions about other modal patterns less receptive to Hitler's imagery (Dicks, 1950).

In short, it would appear that, although collective documents are of great value in providing leads for the study of national character, they cannot tell us with any conclusiveness what range and varieties of modal personality actually exist in a society. The study of numerous individuals, *as individuals*, is in principle the primary method for the assessment of modal personality. Only by maintaining a clear distinction, both in theory and in research, between individual personality and sociocultural nexus can we adequately study their interaction and reciprocal influence.

Collective behavior

A procedure closely related to the study of collective documents, used particularly by those who work with ethnographic materials, is to analyze psychologically the observed regularities of collective behavior. Take, for example, the concept of cultural "plot," earlier emphasized by Roheim (1932), and applied by Bateson and Mead in their study of Bali (1942). (See also Gorer, 1943, and Opler, 1945, 1946, on cultural "themes.") One of the recurrent plots in Balinese life involves a dramatic episode between a seductive female and a responsive male. The female initiates a playful, intense, erotically toned relationship with the interested male, only to shatter his joyful expectations at the last moment by her cold withdrawal. This sequence can be observed in the mother-child relationship and in various adult heterosexual contexts. Its aggressive implications are brought out in ceremonial dances in which the coquettish woman turns into a witch and the bitterly frustrated man first tries to kill her and then literally almost kills himself.

This plot is a "psychocultural" characteristic; it is not in itself a personality characteristic and cannot be *equated* with national character. However, the emotional

intensity of the plot, as well as its reenactment in numerous social contexts, give us good reason to suppose that it *reflects* personality trends that are significant and modal in the Balinese. Even here, of course, extreme caution is required in determining the importance of the "centrality" of any given theme or plot. Unfortunately, just as the students of national character who work primarily with individuals often fail to consider sampling problems, so often do those who work with "plots" and themes neglect to indicate what kind of sample they have drawn from what universe of culturally patterned collective behavior.

At the same time, it should be emphasized that cultural plots analyzed psychologically acquire great importance as a *source of hypotheses* regarding modal personality trends. For example, if a person expressed the above "seduction-withdrawal" fantasy spontaneously in various situations, a psychological interpreter might infer personality characteristics such as defensive blandness in the face of possible frustration, unreadiness for close personal relationships and for "romantic love," a conception of the "bad" woman as controlling-depriving, and so on. These suggested characteristics are, of course, noted merely for illustrative purposes; adequate interpretation clearly would require additional knowledge of fantasies, behavior, and situational context. Similarly, when we observe that the "seduction-withdrawal" fantasy is widely expressed in Bali in the form of a "cultural plot," we may hypothesize that the corresponding personality characteristics are also widely (modally) distributed. In short, it is a reasonable hypothesis that the immanent psychological meaning of the plot is isomorphic with a set of significant, modal personality characteristics.

Extrapolation from modal behavior plots to modal personality structures involves at least two major assumptions: first, that the specific plot meanings have *emotional importance* to the individuals involved, or, in other words, that the plots are not carried out in a meaningless or passively conforming way; second, that the plots have a *common core meaning* for most persons, whatever idiosyncratic variations there may also be. It is therefore incumbent upon the investigator to provide convincing evidence that the plot occurs in many institutional areas and that it possesses emotional importance and temporal stability, as well as psychological consistency with other features of the sociocultural pattern.

Similar objections may be raised to characterization of a population in terms of its *rates* of action in such matters as suicide or war, or its style of institutional functioning as in politics or the economic realm. Apart from the great uncertainty which surrounds the reliability of the statistics on national rates of such actions as suicide, homicide, and mental illness, their treatment as indicative of national character is subject to the important reservation that these rates are, in fact, largely determined by a limited segment of the population; an increase in that segment may greatly change the rate for the nation as a whole. In the case of suicide a change in the proportion of the population over 65, or in the case of homicide an increase in the casual labor force working as emigrant labor, may produce a substantial increase in the national rate. This increases the risk already inherent in extrapolating, for example, from a high suicide rate to a marked depressive tendency in the population at large.

By now we have learned to treat with great caution assertions about the "warlike" or "aggressive" character of Germans supported by reference to their alleged but inaccurately described record for frequency of wars. Less caution has been shown, however, about accepting the description of the Russians as highly submissive to authority on the basis of their long history of autocratic government. Such extrapo-

lations neglect the facts of history and assume that the government people have is the government they want. Yet the studies of Dicks (1952) and of Inkeles, Hanfmann, and Beier (1958) failed to find much evidence in their Russian subjects of a need to submit to authority comparable to that described in the authoritarian personality syndrome.

Even at its best, then, the extrapolation of modal personality from highly institutionalized and culturally standardized behavior can provide only a *hypothetical construction* of national character. The adequate *demonstration* of this construction requires that it also be obtained through a large-scale study of individuals.

STUDY OF CHILD-REARING SYSTEMS

A third method used in the assessment of national character, and one currently attributed great theoretical importance, is the analysis of the child-rearing system, particularly the familial setting during the child's first five or six years (Hernicke and Whiting, 1953; Mussen, 1960; Whiting, 1961; see also Chapters 17 and 24 of this *Handbook*. We shall consider this method only briefly here and return to it in the following section. Ideally, study of the family constellation, forms of discipline, and other developmentally relevant events ought to be accompanied by study of individual children. The resulting picture of modal personality at various developmental levels could then be brought into relation to the independently derived formulations concerning modal adult personality. This ideal is far from realization.

The modal-personality studies that deal with child rearing utilize their findings primarily as a basis for inferences about modal *adult* personality (*cf.* Bateson and Mead, 1942; DuBois, 1941, 1944; Erikson, 1945, 1950; Gorer, 1943, 1948; Gorer and Rickman, 1949; Hsu, 1961a; Kardiner, 1939, 1945b; Leighton and Kluckhohn, 1947; Thompson and Joseph, 1944; B. Whiting, 1963). The procedure is approximately as follows. The investigator tries to learn what is done to the children as they develop, particularly the early feeding and weaning practices, the modes of toilet training, the various demands and prohibitions, rewards and punishments relative to the major dispositions in the child, and so on. From this generalized description of the child-rearing system, and generally without personality assessment of individual children, he derives hypothetical modal personality trends among the children. At the same time, he may attempt a formulation of modal adult personality structures through analysis of collective documents, ethnographic descriptions, and other accounts of collective adult phenomena. He is usually aided in this by his impressions of individual members of the society or, when he lacks firsthand experience, by the impressions of colleagues and informants as to "what it feels like" to be a member of the particular society.

It is of the greatest methodological importance, however, that ordinarily neither the child personality modes nor those for adults are derived from personality studies of numerous individuals. Rather, the psychological interpreter has one eye on the child-rearing system and asks, "What psychological effects are these parent-child relations, basic disciplines, and so on, likely to have on the growing child?" At the same time he keeps his other eye on the adult sociocultural pattern and asks, "What kinds of personality characteristics are expressed in these patterned behaviors and ideas?" His aim is to achieve binocular integration, to arrive at a single answer to

both questions. That is, the modal personality trends hypothesized for the child form the nucleus of the personality structure derived for adults. What is most central in personality is thus conceived of as a link between childhood experience and adult social functioning.

This procedure accords, in a general though greatly oversimplified sense, with modern psychoanalytic and related theories of personality that have already proven useful in individual psychological studies. In criticizing it, we should keep in mind the social fact that the role of psychological interpreter has until recently been loosely appended to a research system primarily concerned with sociocultural processes. And, despite its limitations, the study of the modal psychological environment in childhood has, at the least, provided numerous hypotheses about adult character—hypotheses that “make sense” even when they have not been directly tested by numerous personality studies of adults.

(However, there are numerous risks in the use of this procedure. For example, it has allowed some investigators to link a specific childhood event to a specific adult character trait without adequate consideration of the overall childhood context or of the intervening, complex, developmental sequence. An example is Gorer's (Gorer and Rickman, 1949) inductive leap from the experience of swaddling in childhood to impassivity and controlled rage as adult traits in the Great Russians. This inference involves the assumption—which he rather denies making—that a particular recurrent childhood experience produces, in itself, a particular childhood personality disposition, and that this disposition continues unchanged throughout life. The relation between childhood experience and adult personality is clearly in need of further theoretical clarification and empirical research, with greater attention given to intervening events.

In other studies of child rearing, notably those of Kardiner (1939, 1945b), there is less atomization of the developmental process and greater concern with the total patterning and temporal sequence of childhood events. Kardiner is able to find an isomorphism between the modal personality structure derived from a study of the child-rearing system and that derived from study of collective adult phenomena. He may exaggerate the similarity, however, since he starts with the assumption of isomorphism and since his analyses of child rearing and of adult social milieu are so interdependent. Moreover, the similarity is undoubtedly greater in the case of nonliterate societies than for more complex, rapidly changing, modern nations.

To date, then, study of the child-rearing system has been used mainly as a means of supporting and elaborating inferences about adult modal personality structures which were initially drawn from the study of adult institutions. Ultimately, we must engage in *independent* but *coordinated* study of the child-rearing system and individual children, on the one hand, and the adult social milieu and individual adults, on the other.

The reliance on collective adult phenomena and on child-rearing methods probably contributes to the fact that national-character studies ordinarily designate only one modal personality pattern for any given population. Unimodal analysis seems hardly justified, particularly in the case of large-scale, heterogeneous national populations such as that of the United States. What has been called the “strain toward consistency” in culture might be expected to manifest itself especially strongly in collective documents and group ceremonials. Analysis of these documents and cere-

monials is thus likely to obscure major variations in the actual distribution of personality traits.

Another major shortcoming in empirical work has been the tendency to give virtually exclusive emphasis in a given study to one or a few aspects of the child-rearing system and to neglect other aspects that may have substantial importance. Thus, Gorer, as noted earlier, gives great emphasis to toilet training in studying the Japanese, but gives little attention to oral gratifications, frustrations, and expectation patterns. The reverse is the case in his treatment of Russian national character. This approach increases the chances that the selected determinant will be seen as overwhelmingly important in shaping the modal personality type in the given society.

A closely related problem arises from the frequent failure to disentangle normative statements (descriptions of appropriate or preferred behavior) from frequency distributions of actual child-rearing behavior. Few studies approximate the precision reported by Kluckhohn (1947) for the Navaho project, in recording *actual* behavior in the handling of infants and young children, and particularly in reporting the range of variation around certain central tendencies. The marked variation in opinion and practice in the highly homogeneous Navaho group as to the appropriate time and relative abruptness of so crucial an event as weaning helps to highlight the risks inherent in basing interpretations of national character on the description of child-rearing norms given by a few informants. For more recent efforts to assess individual variations in child-rearing behavior (as directly observed and in self-reports of mothers), see B. Whiting (1963) and Minturn and Lambert (1964).

This problem becomes critical, of course, in highly heterogeneous societies. For example, the addition of the class variable alone so sharply divides the population of the United States along lines of child-rearing procedures that Allison Davis (1941, p. 35) is led to assert that "very few of the statements which one might make concerning . . . socialization . . . of lower-class children would hold for the upper-middle even in the same city." Not only are the goals set before the lower-class white or Negro child basically unlike those set in the lower-middle class, Davis affirms, but "this difference is greatest in those areas of behavior which middle-class society most strongly controls, i.e., aggression, sex responses, and property rights."

① Critical internal differentiation in the population under study is often seriously neglected in national-character research. Gorer (1948, p. 75), for example, asserts that "all but an eccentric minority of child-rearing systems [in the United States] . . . lay down rigidly at what times the baby shall be given what foods," and in a footnote attributes *only* to "progressive circles" a recent shift to self-demand. Gorer is, of course, reporting only one mode, that of the middle classes. In point of fact, feeding on demand is apparently the *standard* approach to the child's hunger responses in a very large segment of the total population, that is, in the "lower classes." Thus, both white and Negro middle-class mothers reported "children fed when they seemed hungry" only about 5 percent of the time, but *lower-class* white and Negro mothers reported this response, respectively, 35 and 50 percent of the time (Davis and Havighurst, 1946). For a more extensive discussion of how American child-rearing practices have changed "in time and space" since the 1930's, see Bronfenbrenner (1961, 1965).

Our emphasis here is not on the imprecision of Gorer's work, but rather on the importance of assessing *multimodal* patterns in large-scale national populations. To

discover such multiple modes where they exist is important not solely to meet the canons of reliable scientific investigation: knowledge about these modes is essential for an understanding of the interrelations between personality and the social system in complex, heterogeneous social structures characterized by multimodal role demands and patterns of interpersonal relations.

② Another major deficiency evident in the reported literature is the inadequacy of observation and interpretation of the child-rearing practices selected for exploration. Flaws of observation are perhaps most strikingly demonstrated by Li An-che (1937). He notes that in several ethnographic reports Zuni child rearing is characterized as indulgent and nonchastising. As he shows, however, this is a misleading formulation. It is true that no single adult has the extensive moral control over the child that a parent has in our culture. But there is a diffusion of authority rather than a lack: the child is, in fact, surrounded by adults each of whom expects conformity and punishes any deviation from the elaborate code of etiquette. And, should no adult be present, there are omnipotent supernatural agents whose anticipated punishment is much more severe.

Although she includes Li An-che among her sources, Goldfrank (1945) does not successfully bring his insights to bear on her interpretation of the psychological meaning of Pueblo child-rearing systems. She observes that Zuni and Hopi parents often scold and threaten punishment but seldom carry out their threats. Before a baby is put on anyone's back it is whipped four times on its buttocks with a bit of yucca. The feeding of infants is often accompanied by a voiced prayer in which the mother anxiously requests the indulgence of gods and ancestors. And yet, in spite of these and numerous other quoted instances of anxiety induction in the earliest years, Goldfrank characterizes the child care as warm and indulgent. She speaks of the "contradiction" between the presumably contented Pueblo childhood and the apprehensiveness and maladjustment of Pueblo adults, and asserts that "it is eminently clear that a study of the period of infancy [read "early childhood," since she includes the first several years] alone would give few clues to the personality structure exhibited by the Pueblo adult" (1945, p. 536). Later developmental periods do increase and structure the anxieties of these individuals, but the lack of "clues" in early childhood is due more to a failure in interpretation than to a lack of observational evidence.

We have perhaps placed an undue emphasis on the study of individual personality and behavior in national-character research. One may suggest, as Margaret Mead does in some of her writings (1951b), that personality and culture are so inextricably bound together, so reciprocally interweaving, that the formal distinction between them need not or cannot be maintained in national-character studies. We agree that "personality," "culture," and "social structure" are three abstractions derived for the most part from a single order of phenomena, namely, human behavior and experience. The distinction between them is thus largely an analytic, not a phenomenal, one. However, if this distinction is to be usefully applied in our research, we must achieve independent analyses of modal personality structure, on the one hand, and culture and social structure on the other. Given these distinct but coordinated analyses we can hope to approach more adequately the major substantive problems of the national-character field, particularly those involving the functional relationships between national character and sociocultural matrix. These problems are discussed in the next two sections.

THE INFLUENCE OF THE SOCIOCULTURAL SYSTEM ON THE FORMATION OF MODAL PERSONALITY

Thus far we have been concerned primarily with theoretical and methodological problems in the delineation of modal adult personality. Two major questions await our consideration: First, what are the major *determinants* of modal personality? Second, what are its social *consequences*, that is, what is the role of modal personality in maintaining or changing the sociocultural system? Let us turn now to the first question, and defer the second until the following section.

Within the context defined by the title of this paper, the problem of "determinants" may be stated as follows: *What regularities in the social conditions of development—in the more or less standardized sociocultural matrix—help determine the observed regularities (or modes) in adult personality?* We thus exclude from consideration a host of developmental influences that are not societally standardized and which contribute to inter-individual differences and intraindividual uniqueness in every society. It should be noted, however, that personality variability is as "real" a property of society as personality standardization, and that the determinants of both should be considered in a more complete analysis. Moreover, social scientists must have some appreciation of the total process of individual personality formation if they are to determine the psychological meaning and consequences of standardized social influences.

Brief mention should be made of mode-determining influences that are not sociocultural and are therefore beyond the scope of the present discussion. The possible importance of constitution, in Sheldon and Stevens' (1942) sense, has been suggested by Morris (1947). As Anastasi and Foley (1949) and Hall (1941) have pointed out, psychologists have tended to neglect heredity and temperament as possible sources of individual and group differences.

INFLUENCE OF THE FAMILY ON PERSONALITY DEVELOPMENT IN EARLY CHILDHOOD

Psychoanalysis has been the decisive theoretical influence in turning the attention of students of national character to infancy and childhood as a crucial period in personality structuration (Fromm, 1949; Kluckhohn, 1944; Mead, 1951b). This in turn has led to consideration of the *family* not merely as a formal kinship system or role structure, but in addition as a psychologically meaningful relationship system (Fromm, 1936; Kardiner, 1939). From the point of view of its child-rearing activities, the family is seen as having both an *individual* function, namely, to promote the child's development, and a *societal* function which, as Freud (1930) observed, is to induce the kind of (modal) personality formation that will make the growing offspring maximally receptive to the prevailing ideas and maximally adaptive within the existing social order. The societal function is complicated, in modern industrial civilization, by the fact that each new generation must to some degree innovate and adapt to changes in the social order. Thus, capacity for change becomes a societally required, though not necessarily a modally achieved, personality characteristic (Alexander, 1948, 1951; Erikson, 1950; Fromm, 1941; Inkeles, 1966a, 1966b; Lerner, 1958; Mead, 1940, 1947b; Pool, 1963).

Though the various clinical psychoanalysts and psychoanalytically minded social scientists differ in their views regarding the process and the determinants of early

personality development, they are in substantial agreement that the *major outlines* of individual personality becomes crystallized in childhood (roughly the first six years of life). Thus, one of Gorer's guiding postulates is that "the habits established early in the life of the individual influence all subsequent learning, and therefore the experiences of early childhood are of predominant importance" (1943, p. 107). Roheim's "ontogenetic theory of culture" (1943b) predicates a correspondence between infancy situation and adult cultural forms. Whiting and Child (1953), through cross-cultural studies, have found significant relationships between child-rearing methods and adult idea systems and practices. Fromm (1941) and Reich (1945) regard the family as the reproductive mechanism of the social organization because of its key role in early personality formation. Kardiner (1939), giving perhaps the most systematic formulation of individual-society interaction, proposes that modal child personality is of central importance for later adult personality and, in turn, for the maintenance or change of the sociocultural system.

The psychoanalytic developmental theory of oral, anal, and phallic psychosexual stages, of ego and superego formation, and of the Oedipus complex and its variant resolutions, as ongoing processes *in the child*, has been a rich source of hypotheses concerning the psychologically relevant characteristics of the *social context* in which children develop. The early psychoanalytic theory of development has been modified and extended in various directions by Freudians and neo-Freudians, by socially oriented psychiatrists such as Sullivan (1947), and by investigators using a mixture of psychoanalysis and behavior-learning theory (Bateson, 1944; Dollard *et al.*, 1939; Gorer, 1943; Whiting, 1961; Whiting and Child, 1953). The similarities and differences among these viewpoints have not received the attention they deserve. There is great need for a systematic comparison, in national-character perspective, of the major theoretical approaches currently taken in the study of the nature and determinants of personality development.

Perhaps the most extensive study of child rearing in the past decade is the program of research on six cultures undertaken conjointly by Child, Lambert, J. W. M. Whiting, and numerous collaborators (Minturn and Lambert, 1964; B. Whiting, 1963; J. W. M. Whiting, 1961; and Chapter 17 of this *Handbook*). The conceptual focus is on several *behavior systems* found universally in children and dealt with universally by culturally defined child-rearing practices. The behavior systems include succorance (dependence), self-reliance, achievement, responsibility, obedience, and aggression, among others. An additional focus is the development of *internal controls* (guilt, conscience, superego). The child-rearing practices are examined in terms of the degree to which, and the ways in which, they control, punish, reward, indulge, and excite each behavior system.

The casual sequence posited in this research may be stated schematically as follows (B. Whiting, 1963, p. 5): Culturally standardized *child-rearing practices* produce certain characteristics of *modal child personality*, which in turn lead more or less directly to *modal adult personality* (as reflected in common patterns of adult behavior and cultural products). This causal paradigm has two features stemming from the psychoanalytic tradition: (1) that the primary determinants of child personality are in the family constellation and modes of child rearing; and (2) that the major elements of adult personality are laid down in childhood. In their empirical work the investigators do not follow this model literally; for example, they attempt to describe the development of personality in the years between childhood and adulthood, and

they take ethnographic account of sociocultural factors other than the family that influence personality development. Since the theoretical model has generated widespread controversy, we shall discuss the two basic assumptions briefly in turn.

EXTRAFAMILIAL INFLUENCES ON CHILD PERSONALITY DEVELOPMENT

The first assumption is that influences within the family constitute the primary determinants of personality formation in the child. The family is thus regarded as the crucial agency by which the societally required modal personality patterns are recreated in successive generations. The question then presents itself: *In what ways do other sociocultural factors operate to influence childhood personality development?* In the conceptual scheme of the "six-culture" project, other factors are introduced in the following causal sequence: (1) *ecology* (diet, climate, natural resources, and the like) has a determining influence on (2) *maintenance systems* (technology, economy, and social structure, including kinship patterns and household arrangements); these in turn give rise to (3) interpersonal relationships and *child-bearing practices* in the family, which are the immediate determinants of (4) *child personality* (B. Whiting, 1963, p. 5).

This conceptualization adds important dimensions to the study of family and personality development. In the clinical psychoanalytic literature, family structure and modes of child rearing tend to be regarded as ultimate causes, and as reflections primarily of the personalities of the parents. Though the major psychoanalytic social psychologists such as Freud (1930, 1938), Fromm (1936), and especially Kardiner (1939) conceived of the family as serving societal functions and as being influenced by its sociocultural environs, this point of view has not been widely assimilated into the mainstream of psychoanalytic thinking. There is by now considerable evidence that ecological and social-structural factors exert a significant influence on family patterning and child-rearing practices. Earlier work on ecology has been reviewed by Faris (1944). Aberle (1961) has pointed to cross-societal variations in child rearing as a function of political structure, technology, and economic organization. Aberle and Naegele (1952) have shown that the father's occupation (that is, his involvement in a wider occupational and class structure) enters intimately into his relationships with his children. Miller and Swanson (1960) have demonstrated massive differences in child-rearing methods and in child personality, depending on whether the father has an entrepreneurial or an organizational occupation. The literature on changing class differences over time in American child-rearing methods has been analyzed by Bronfenbrenner (1958). Minturn and Lambert (1964), in a factor analysis of comparative data from the "six-culture" study, have shown that maternal warmth and other characteristics of mother-child relationships are systematically related to factors such as size of household and mother's employment outside the family. Inkeles (1968) attempts a synthesis of the evidence of such sociocultural influences on parental socialization practices as manifested in economic and political structures, stratification systems, ecological factors, and role models.

There is growing evidence, then, that ecological and social-structural variables exert an influence on child-rearing practices and thus indirectly on child personality development. We would suggest, however, that the sequential causal chain posited in the model above represents only part of the actual process. Ecological and structural conditions affect the child's personality, in part, through the mediation of the

family; they also enter the child's experience, and affect his personality development, in more direct ways. For example, in disciplining the child's impulse life, parents often invoke religious values, symbols, and fantasies about benevolent or punitive supernatural figures who become significant objects in the child's inner world. However, the religious system impinges upon the child in more immediate ways as well, and is not mediated solely through the family. Conditions of extreme poverty, danger, and oppression affect the child very directly and not simply through the mediation of the family. Erikson (1950) shows that the river and the salmon run are ecological factors of central importance in Yurok culture and personality; they acquire complex (conscious as well as unconscious) meaning for the child through his experiences in the family and elsewhere. Inkeles (1966b) reviews the multiple channels whereby social structure impinges directly on the socialization of the poor.

Finally, we may cite Kardiner's (1939) analysis of *ingratiation* as a pattern of relationships between younger males and older authority figures in Tanala. This pattern has its prototype in the early relationship between father and son. It is crucially affected by the custom of primogeniture, in which the first son inherits the total paternal wealth—unless the father decides that a younger son is more worthy. In a multifaceted analysis, Kardiner portrays the interweaving of cultural, structural, ecological, and psychodynamic elements in the evolution of the ingratiation pattern. These elements interrelate to form a *multidirectional causal network* rather than a unidirectional causal sequence. No one set of determinants—be it the family, the economic structure, or the natural ecology—can appropriately be regarded as the primary or ultimate influence on modal personality. (See Inkeles, 1968.)

SOCIOCULTURAL INFLUENCES ON POSTCHILDHOOD PERSONALITY DEVELOPMENT

The second assumption noted above is that the major elements of adult personality are laid down in childhood, so that adult personality can be predicted from the study of child-rearing practices and child personality. This position is taken in the "six-culture" investigations and is an explicit part of their conceptual scheme. It is taken in many other studies as well, for example, in McClelland's (1961) research which shows a relationship between the emphasis on achievement motivation in children's primers and the subsequent level of achievement behavior in the children-become-adults. While this approach may be useful for certain research purposes, and has indeed led to the discovery of significant empirical relationships, the model is overly simple and restrictive. It leads to the neglect both of postchildhood changes in personality and of the influence of sociocultural factors on personality development in middle childhood, adolescence, and various periods of adult life. Consideration of these influences is especially important in less integrated and stable societies where the individual is confronted with changing opportunities and demands in different life periods and social contexts.

Although one may be able *ad hoc* to discover correspondences between child personality and adult personality, it is difficult to predict what the adult personality will be from a knowledge only of the child personality. As Benedict (1938) has noted, there may be drastic shifts or discontinuities in the individual's cultural experience from one age period to the next, and traumatic or supportive experience occurring in middle childhood or later may be of decisive importance for further

personality development. Goldfrank (1945), Orlansky (1949), and Underwood and Honigsmann (1947) develop this argument more extensively with regard to possible contrasts between infancy (roughly the first year of life) and later periods.

How deep is the contradiction between the postulate that the personality formation in early childhood is "basic" to adult personality, and the observation that important developmental changes occur in the postchildhood years? This dilemma is, in certain respects, an artificial one. The psychoanalytic position is not that child personality and adult personality are *identical*, but that the former provides a foundation or structural framework for the latter. Consider the individual who, at the end of early childhood, has intense oral-destructive fantasies in which he is alternately the destroyer and the victim of an omnipotent evil force. Psychoanalytic theory would seem to require the prediction that these fantasies will have an important organizing role in the adult personality. However, the form in which they are expressed, and the degree to which they remain ego-alien or become synthesized into a personally and culturally meaningful ego identity, will depend in no small part on experiences in middle childhood, adolescence, and beyond. A striking illustration of this process is given in Erikson's (1950, pp. 381-388) discussion of the Dakota.

The psychoanalytic viewpoints allow, in principle, for change as well as constancy in development and for consideration of the total developmental sequence. At the same time, there has been a strong tendency in actual practice to focus exclusively on early childhood and to neglect later formative periods. This tendency arises in part from the relative paucity of developmental theory concerning the later periods. For example, Kardiner (1939, 1945b) attempts in his various studies to describe the life cycle of the individual from birth to adulthood. Conceptually, however, he relates adult personality primarily to the events of early childhood.

Roheim (1932) suggests that the individual can develop specific cultural values and ways only *after* the major processes of superego formation have occurred, that is, after the age of five or six. Devereux (1951), following Roheim's lead, proposes that the middle-childhood period from the phallic psychosexual stage until puberty is in many respects the crucial one for the development of an articulate "culture" within the individual. However, neither investigator has provided much in the way of a conceptual account or an empirical description of this development.

Theoretical interest in personality development during middle childhood, puberty, and adolescence has increased notably within the past few decades, though this trend has not yet had a great impact on national-character research. Sullivan (1948) offers a number of interesting ideas in this connection, but his theory is relatively schematic and has not been explicitly utilized in societal investigations. The same is true of Murphy (1947); some of the merits of his approach may be inferred from his study of India (1953).

The successive volumes of *The Psychoanalytic Study of the Child* (A. Freud *et al.*, 1945-1965) reveal a growing concern with postoeidipal development among psychoanalysts. The low level of interest in this problem prior to 1940 can be seen in the brief sections on "latency" and "adolescence" in the textbook by Fenichel (1945), who points to the need for further study and theory. One of the more elaborate attempts in this direction is Erikson's (1950) theory of stages in ego development, which bears important similarities to Sullivan's less fully developed scheme. Erikson's theory was developed in part through his field investigations of the Sioux and the Yurok (1945); its promise for the study of modal personality is shown in his work on

American, German, and Russian personality (1950), and in his psychosocial study of *Young Man Luther* (1958).

Benedict (1938; 1946a, Chapter 12), as we have noted, was one of the first to call attention to experiences intervening in development after infancy. Margaret Mead has placed emphasis on the continuing influence of sociocultural participation on personality. In her discussion of American character (1940, 1942), for example, she notes that adult personality must be seen in relation to both the shame-oriented, diffuse-authority, *adolescent* peer culture, and the family setting of early *childhood* with its greater demand for inner moral control by the child and its induction of guilt as a consequence of value violation. This is but one of many instances of *cultural phasing*, of shifts in the patterning of self-definition and interpersonal relationships from one age period to the next. Other instances are given by Beaglehole (1944) and Leighton and Kluckhohn (1947). These writers are able to encompass the phenomena of cultural phasing within the framework of psychoanalytic theory. They stress the importance of personality changes during middle childhood and adolescence, but they seek to understand these changes in the light of the basic structure established in early childhood. In general, however, it seems fair to say that more has been done to illustrate than to conceptualize and document the process and determinants of personality change over the life span.

If we conceive of the person as to some significant degree open to influence and as still developing into middle adulthood and beyond, then we may properly inquire into the sources and determinants of change. Some of them, of course, involve biological forces accompanying the process of maturation and aging. Change may also result from self-generated processes of self-examination and transformation, as, for example, in the experience of those religious converts whom William James described as "twice-born." A brilliant medicine man in traditional societies or psychotherapist in modern society may in some cases bring about a profound personal transformation through individual intervention. These sources of influence are not sufficient, however, to explain modal personality, especially on the scale of national character. Widespread sociocultural forces must operate with great coherence and vigor to reinforce existing tendencies or to shape new ones, if modal personality patterns are to develop in a given population.

We may again take our model from the *occupational* realm. Robert Merton (1957) argues that "as a result of their day to day routines people develop special preferences, antipathies, discriminations, and emphases." Furthermore, organizations and groups within them work to "infuse group participants with appropriate attitudes and sentiments" and make definite arrangements to reinforce those sentiments. Applying this model to the typical formal bureaucracy, Merton argues that in this environment individuals should develop personal rigidity, haughtiness (as a reflection of the bureaucratic rule of impersonality), and a preoccupation with dominance and submission in interpersonal relations.

Merton presents no evidence to support his hypotheses concerning the effects of bureaucratic structure on personality. To establish such propositions firmly, we would require longitudinal studies, which are unfortunately rare. Lieberman's (1950) study of foremen before and after promotion to their new status, Breer and Locke's (1965) experimental work on the influence of group structure and tasks on the values of participants, and Inkeles' (1960, 1966a) cross-national study of the effects of industrial work on personality represent forays into a great unexplored

research area. Some clarification of theoretical issues may be helpful in stimulating further research.

Norms of behavior deriving from the core *cultural values* are the most obvious source of potential influence on adult personality. In the more modern societies the dissemination of such standards is in good part taken over by mass media of communication. The extent to which such norms can change *personality*, as against mere external or perhaps purely verbal conformity, is a matter of dispute. Studies of the impact of the mass media in more open societies such as the United States suggest that the effects are minimal, whereas those on more closed systems such as Nazi Germany and Soviet Russia indicate that they may be substantial.

More or less uniform *organizational patterns* create the potential for substantial influence on adult personality modes. National styles in administration may be quite marked, as Crozier (1964) has shown in the case of French government bureaucracy. If the same administrative style were prevalent in other realms such as industry and education, it would constitute a massive source of influence on large segments of the population.

Various aspects of the *political, economic, and status* structure may be important influences in generating national adult personality modes. We speak of societies as open or closed, democratic or totalitarian, static or dynamic. These are global and imprecise designations, but they suggest the existence of pervasive structures of reward and punishment, of widespread patterns of interpersonal relations. Comparative studies have consistently shown the Americans to be optimistic, the French pessimistic (Inkeles, 1960). It is yet to be determined to what extent such differences stem from early childhood influences and to what extent from adult experiences in living within the institutional framework of the respective societies.

Ecological factors may also play some part in creating a distinctive social climate that affects adult personality. The size and density of the national and local population, the diversity of the population (especially in ethnic, religious, and occupational terms), the standard physical arrangement of living and working space—all of these are forces with potential for influencing human relations and thereby for shaping character.

Sociocultural conditions affecting personality development in adolescence and early adulthood have been the subject of investigations by Erikson (1950), Fromm (1941), Mead (1940, 1947b, 1951a, 1953), M. Levinson and D. J. Levinson (1959), and Eisenstadt (1956), among others. These studies suggest as important determinants: conditions of sociocultural change as contrasted with stability; experiencing adolescence in a family that is firmly rooted in the local culture as contrasted with one that is part of an immigrant minority in a strange culture; coming to adolescence in a culture in which the adults are respected as against one in which they are devalued relative to the adolescent peer culture; having available a rich store of valued role models as contrasted with having only an impoverished and degenerated cultural heritage; and so on.

These are merely illustrative of the mass of important dimensions of the sociocultural setting which would seem to affect modal adult personality. Some of these conditions—such as rapid disintegration of old core cultures, marked shifts in the definition of previously venerated role positions (such as the elder and the sage), urbanization, industrialization, and other forms of economic dislocation and reorganization, mass communication and mass recreation—are already widespread and are

likely to become important influences in still larger areas of the world in the next few decades. Their impact on modal personality patterns may be substantial. There is great need for fuller understanding of the influence of sociocultural conditions on personality at every period of the life span (Brim and Wheeler, 1965; Inkeles, 1968).

THE INFLUENCE OF MODAL PERSONALITY ON THE FUNCTIONING SOCIAL SYSTEM

Up to this point we have attempted to define modal personality, to explore methods for its assessment, and to consider the influence of culture and social structure in its determination. We turn now to an examination of the relevance of modal personality patterns for the functioning of social systems. To demonstrate the influence of personality on normative social behavior at the most general level, we shall begin by exploring its relation to individual role performance. We shall then consider the relation between modal personality patterns and the functioning of specific societal systems.

PERSONALITY AND SOCIAL CONTROL

Clearly, before one can affirm that *group personality* modes have relevance for the functioning of the total societal system, it is necessary to establish that there is a meaningful connection between the *individual's* personality and the behavior required of him by virtue of his membership in some social organization. The individual's participation in any society occurs via membership in a series of more or less explicitly defined "status positions," for example, father, employee, Catholic, old man. Each of these positions involves a series of expected behavior patterns which constitute "role demands" for the individual member. The crucial feature of this expected behavior is that it is tied into a network of reciprocal relations with other individuals in related statuses within the given institution or societal system. The failure of any status holder to fulfill his role requirements will make it difficult for other participants in the particular "system of social action" to fulfill their roles. Minimally this will lead to strain, and maximally it may produce so serious a disruption of the established pattern of mutual expectations as to cause the breakup of the total relationship network.

A variety of social mechanisms increase the likelihood that individuals in particular status positions will behave in accord with system requirements. Societies train individuals for the positions that they are likely to hold. The training may be formal and specific, as in the preparation of an individual for a particular occupation. More important, perhaps, is the less formalized instruction and indoctrination which takes place during the socialization process in infancy, childhood, and adolescence. One major aspect of the socialization process is the individual's relationship with a series of important role models—father, older sibling, teacher, etc. The *internalization* of the relevant values and the *learning* of the appropriate behavior patterns manifested by these models furnishes the growing child with a repertoire of basic social roles.

However, socialization does not automatically ensure adequate role performance. All social systems include certain additional instrumentalities for inducing socially appropriate behavior. Perhaps the most important of these are *social sanctions*.

Broadly defined, sanctions represent the rewards and punishments allocated to group members by other individuals and the group at large in consequence of adherence to or departure from the behavioral norms prescribed by the group. Positive sanctions or rewards range from approval and prestige to material possessions and consumable goods. Negative sanctions or punishments range from the application of physical force to forms of pressure such as shaming or otherwise threatening the self-esteem of the deviant. If the great majority of individuals in any society learn to aspire toward the proffered rewards, and to avoid the threatened punishments, then the behavior appropriate to given roles will generally be forthcoming and the functioning of the system as a whole will thereby be ensured.

The above statement assumes the operation of certain general *psychological processes*, in particular, learning, but it does not systematically introduce *personality* characteristics as variables affecting response to social sanctions. We propose, in addition, that personality traits regularly do enter into the effectiveness of sanctions and hence into general system functioning.

Character and negative sanctions

To begin, let us consider negative emotional sanctions such as shame and ridicule. The capacity to develop these feelings is presumably a potentiality in all humans, but their development in any given individual is dependent on the socialization process. This potentiality may be more fully or less fully realized in particular individuals. Moreover, the feelings themselves may have little or great effect on the individual's sense of self-esteem. The *effectiveness* of negative sanctions such as shaming, ridicule, or charges of immorality is dependent on the individual's readiness to feel shame, loss of face, or guilt, and on the association between such feelings and the sense of self-esteem. Consequently, the degree of readiness to experience these feelings and the extent of impact such feelings have on self-esteem become a variable personality trait which will influence the effectiveness of specific types of social sanction.

Insofar as *individuals* may vary in their readiness to experience shame, guilt, and ridicule, it is possible that this readiness may vary significantly between the *populations* of different societies. Cultures vary greatly in the emphasis placed on shaming, ridiculing, or invoking moral principle as social sanctions. Indeed, so marked are the differences that some anthropologists have classified cultures as "guilt" or "shame" cultures. There is evidence that the individuals in such cultures have modally differential dispositions to be affected by guilt or shame (Leighton and Kluckhohn, 1947; Piers and Singer, 1953). In his analysis of contemporary Russian behavior, Dicks (1952) noted that "the classical phenomenon of Russian behavior" remains the introjection of aggression-guilt under pressure. It is to this readiness "to share in, or be aware of, offenses in oneself against the demands for loyalty to the group" that he attributes the apparent vulnerability of the Russian to public shaming, confession, and recantation. It is also suggestive that in China, where the threat of loss of face in all its myriad ramifications is so central as a sanction, at least one observer (LaBarre, 1946) concluded that "the sense of sin is nearly absent."

Tentatively, therefore, we make an initial hypothesis on the relation between modal personality and social structure: *the effectiveness of any system of social sanctions is dependent on the presence of appropriate psychological constellations in the members of the social system.* According to this hypothesis, social systems that emphasize guilt, shame,

or ridicule as sanctions will require for effective functioning that their members show *as a characterological trait* relatively high readiness to suffer loss of self-esteem from feelings of shame or guilt, or from being ridiculed. The average individual from a society that emphasized shame would be expected to be less conforming if he were transferred to a society emphasizing a different sanction, such as withholding love. In comparable fashion, an individual socialized in a "conditional-love," guilt-inducing system could not readily be controlled in a society emphasizing shame or ridicule.

To test this hypothesis Inkeles, Hanfmann, and Beier (1958) explored the relations between guilt and shame and reponsiveness to sanctions imposed by the Soviet regime. Their American control group were more likely to feel ashamed if they were incompetent or could not meet public competitive norms in sports or production. The Russian refugee subjects were relatively immune to shame on these grounds, but they experienced great loss of self-esteem over failure in norms involving interpersonal relations. This finding was then used to explain the failure of Soviet governmental efforts to utilize public shaming to cajole Soviet citizens into greater production efforts and more exacting fulfillment of government regulations.

Character traits and positive sanctions

Turning now to a consideration of *positive* sanctions or rewards, we may expect to find relationships between personality and conformity similar to those just discussed. The effectiveness of positive sanctions clearly depends on the motivation of individuals to attain the rewards offered. We shall use the term "social aspiration" to represent the propensity of individuals to pursue goals or to seek the realization of values defined by their culture as legitimate and important. As such, social aspiration is a universal psychological process and in itself involves nothing specifically characterological.

There are, however, two levels on which a connection between social aspiration and traits of character may be established. In the first place, psychological traits may act directly to affect the *strength* of given aspirations. Consider, for example, the Sioux society, which places heavy emphasis on achievement in the role of warrior and hunter. As Erikson (1945) has noted, the presence of large amounts of undischarged aggression and the absence of strongly internalized sanctions on aggressiveness in the individual help to maximize the intensity of his desire to fulfill the cultural role model. In other words, his personality characteristics affect the strength of his aspiration. One would expect a Sioux child without such aggressive propensities to be an undistinguished warrior and unlikely to become the leader of a war party. Indeed, if the level of aggression were low enough, or the internalization of sanctions against aggression strong enough, such an individual might well reject the role of warrior and become a deviant in his society. Similarly, a Hopi, trained to repress aggression and to see its manifestations as threatening, would, if transferred to Sioux society, probably lack the aspirations to adopt the warrior role.

On a second level, that of *instrumental adequacy*, psychological traits may act more indirectly to affect social aspirations. Given the nature of the social aspiration and the situation provided by the culture for the attainment of a given goal, certain traits of character may increase or decrease an individual's adequacy in striving for the goal. Consider, for example, a society in which prestige is a major social aspiration, and where prestige is achieved through the acquisition of certain types of physical property. In this situation, the ability to postpone gratification, and the tendency to be

penurious and ungenerous, would clearly increase one's chances of acquiring the physical possessions essential to the attainment of the prestige goal. Furthermore, it is clear that individuals whose characterological propensities spontaneously lead them to retentive behavior would find the instrumental actions of property accumulation gratifying in themselves. Thus, the presence or absence of a character trait such as retentiveness may influence the extent to which two individuals with the same strength of aspiration will be differentially effective in their goal strivings (*cf.* Fromm, 1941).

Traits of character may be seen, then, as having substantial relevance for the internalization of culturally preferred goals, for the intensity of aspiration to achieve them, and for the ability to fulfill their inherent action imperatives. Further, insofar as the relevant traits of character are *modally* present in the population of any society, the chances are increased that culturally and structurally important goals will be aspired to and implemented by the society's members, thus in significant degree ensuring the continued effective functioning of the social system.

PERSONALITY AND INSTITUTIONAL FUNCTIONING

We have suggested that personality is relevant to the effectiveness of social sanctions and enters directly and indirectly into social aspiration, affecting the individual's acceptance of and performance in social roles. Since an institution may be involved in a system of role relationships, we may also expect personality to enter systematically into the functioning of institutions.

Occupational roles

We may profitably begin with a consideration of occupational roles, which present fairly specific requirements in a relatively limited number of situations. As Everett Hughes (1929) has pointed out, the relation between personality and occupation is fairly obvious in the case of certain "professions" in nonliterate societies, such as medicine man, charmer, or performer of rituals. In larger and more heterogeneous industrial societies, the elaborate division of labor, the emphasis on what Parsons calls "universalism" and on technical efficiency, and the fortuitous character of job placement all combine to obscure the relationship. Nevertheless, as Roe (1947) indicates, it still exists and is clearly evident in extreme cases. She points out, for example, that a man with claustrophobia would not work as an elevator operator, or as a coal miner, and that someone with a mild obsession about dirt is likely to make an excellent scrubwoman.

Though there may be a clear connection between certain extreme personality traits in particular individuals and their occupational placement, can we establish an important relation between a broad occupational category and a particular set of personality variables? Consider for a moment the position of librarian in our society. The tasks of a librarian put a premium on order, discipline, punctuality, neatness, precision, and control over the expression of affect. The librarian not in an administrative position is expected to be subdued, quiet, polite, respectful, and helpful. Individuals with a forceful, outgoing, overtly expressive personality, those who are active, striving, and masterful, or those who incline to be undisciplined, disorderly, or untidy, would not be maximally adapted to the requirements of this occupational role.

We suggest, then, that certain occupational positions may attract individuals of one type and repel those of other types. Further, the strength of certain personality traits may influence the individual's adaptiveness to the demands of particular occupational roles. Unfortunately, there has been relatively little research on this problem, though some of the initial results are suggestive. For example, it appears that life-insurance salesmen are relatively homogeneous on the dimension "dominance," and several other occupational groups manifest distinctive homogeneity in regard to other traits (Komarovsky and Sargent, 1949; Roe, 1947, 1956; Rosenberg, 1957). Since the evidence is so limited, however, we can only suggest the potential relevance of personality components for performance in those *particular* occupational roles that require such specific overt behavior as to permit specification of relevant distinctive psychological correlates.

Insofar as a particular occupation demands highly specific behavior patterns and emphasizes distinctive types of orientation, we may expect that different national groups with different modal personality structures will adapt differentially to the general demands of the specific occupational role. Modern military organization, for example, everywhere emphasizes precise differences in status and power, the exercise of marked authority and the exaction of unswerving discipline, orderliness and calculability, hardiness and virility, and group solidarity. G. D. Spindler (1948), in comparing the orientation of Germans and Americans to these generalized demands of the military situation, finds important differences in emphasis which he relates to differences in American and German male character. For the American, precise differences in status are a source of discomfort, since they challenge his conception of himself as an equal, as an individual who will be valued for his personal qualities and on the basis of those alone. As a result, in many American military situations status differences become obscured. In contrast, the Germans are described as manifesting a strong interest in status, and as being most comfortable in relations where status is precisely defined. Correspondingly, status differences are always kept unmistakably distinct in the German military. Whereas Germans value orderliness and calculability, these are much less emphasized by the American military, who give greater stress to criteria of "efficiency." Authority and discipline are infinitely more demanding and rigorous in the German Army, because the American values the self and sees obedience to authority as essentially ego-humbling. Spindler notes in this connection that the American family situation inculcates an expectation that conformity is required to retain parental love. The experience of control through love, he points out, does not prepare the individual as well for submission to authority as does the experience arising from life in the German family, where there is a heavy emphasis on discipline in response to stern male parental authority.

A comparable analysis of the difference between French and American bureaucratic structures is presented by Crozier (1964). He notes that in contrast to the American bureaucracies—which have their own distinctive dysfunctions—the French bureaucracies characteristically develop excessive centralization and extreme isolation between different strata. He attributes this tendency, in part, to certain characteristics frequently noted in studies of French character, such as difficulty in face-to-face relations. Also noted is their conception of authority as something indispensable yet absolute, which leads them to put as many barriers as possible between it and themselves.

Political structure

Moving to a still broader area of institutional involvement, we briefly consider the relevance of modal personality configurations for the functioning of the political structure (*cf.* Leites, 1948). Erikson (1950, Chapter 8) holds that Americans manifest, as an enduring personal trait, a strong emphasis on the principle that there accrue to each individual in a group "claims for future privilege on the basis of one's past concessions." He sees this trait as arising out of a distinctive family milieu. As compared to the family in most European cultures, the American family is much less divided into unequal partners, cleaving on the line adult-child, male-female, younger-older sibling. Rather, all members are regarded as having rights and interests equally to be protected. The family then becomes "a training ground in the tolerance of different interests." Erikson sees a relation between this family pattern and the two-party system in America, which he describes as "a rocking sea of checks and balances in which uncompromising absolutes must drown." He suggests, further, that there may be a relation between the emphasis in the family on doing what is least unacceptable to any one member (as against doing what *all* want) and the operation of Congress. He observes that in Congress the possibility that good legislation may fail to pass is of less concern than the possibility that some legislation will be passed that is markedly *unacceptable* to some major group because it negatively affects their vital interests.

Erikson treats this pattern largely in terms of an analogy, but it can be phrased more formally in terms of the relation of personality to social institution. Clearly, a personality type attuned to handling authority or power would find the particular American pattern of political action difficult to adjust to and perhaps intolerable. Indeed, it has been suggested that a major contributing factor in the fall of the Weimar Republic was the inability of large numbers of Germans to tolerate the necessity for political compromise required by the system of democratic government instituted after World War I. The mode of analysis represented by Erikson's treatment of American politics has great appeal. Numerous discussions of German politics between the two world wars were based on the assumption that characteristics of the German family generated the authoritarianism of Nazi politics. Soviet totalitarianism has similarly been explained by reference to certain deep-lying features of Russian character. Lucian Pye (1962) suggests that Burma has been unable to develop a stable polity in part because of the Burmese lack of certain modal personality traits—such as a firm sense of identity and a sense of order—which are essential to the effective functioning of a modern political state.

Though interesting and often persuasive, these analyses of the influence of personality modes on institutional functioning are not yet conclusive. The institutional qualities treated as dependent variables are often not precisely defined or objectively measured, though these are difficult feats when one is talking about the relative authoritarianism of a political system or the degree of centralization in a bureaucracy. On the personality side, the available descriptions are generally impressionistic. Indeed, there may be a certain circularity in the analysis, since the personality characteristics treated as typical may in part be derived from observation of the very institutions now treated as dependent variables.

These difficulties should intensify our search for more objective indices and procedures which are independently established and widely available. The research

of Whiting and Child (1953) and their colleagues (see Whiting, 1961) provides useful leads. They select dependent structural variables on theoretical grounds and measure them for a large number of cases independently. We are increasingly in a position to do the same for important structural variables generally found in modern, large-scale societies. Banks and Textor (1963), for example, have developed some measures for 115 nations of the world on such dimensions as the stability of their government and the degree of interest articulation which characterizes their political system. Other useful ratings are given by Russett (1964).

We are, unfortunately, much less well-off when it comes to objective measures of modal personality in the nations for which these structural measures are available. This renders of particular importance those few studies in which some aspect of the personal system has been directly examined in a comparative research. In Lerner's (1958) study of empathic ability, for example, there is evidence that the relative degree of modernization of a country is correlated with the empathic ability of its people. Almond and Verba's (1963) data for six countries reveal a definite relation between the frequency with which citizens express a sense of civic competence and the relative degree of local democracy found in their respective countries. There are, of course, striking exceptions. To the extent that such patterning exists, we are faced with a vexing question: Are the characteristics of the polity produced by the personal qualities of the population, or are the qualities of the population generated by the nature of the political system under which they live?

McClelland (1961) is one of the few analysts who have addressed themselves explicitly to this question. Though he did not study individuals directly, his analysis of need achievement as reflected in children's readers permitted him to establish a relation between changes in "*n* Ach" and in economic development over a substantial span of time. He concludes that changes in personality preceded changes in economic development. His data by no means settle this issue. Clearly, many factors other than modal personality affect the forms and growth of economic and political institutions. Nevertheless, McClelland's technique does foreshadow future developments. When we have regular and systematic personality inventories of national populations taken over time, we will be in a position to test more systematically the *causal* as well as the associational aspect of the relation of personality modes to elements of social structure.

Expressive institutions

In our review of methods for delineating national character, we noted the frequent derivation of personality modes from an analysis of what we called collective documents—folktales, popular literature, movies, religion. The order of these elements may be reversed, however, and the collective documents may be treated as the dependent variable. The question then becomes: Given a certain modal personality pattern, what effect can this be expected to have on the art, literature, games, and folklore which a population is likely to generate and support? This question cannot be properly asked if the description of modal personality has already been deduced from a study of the collective documents; we have here another reason for deriving modal personality patterns from the direct study of samples of individuals.

There is a substantial literature attempting a psychological, and most frequently a psychoanalytic, interpretation of mythology, folklore, art, and music (Devereux and LaBarre, 1961). Most of the studies illustrate some universal principle of psychology

such as the oedipal conflict, or point out the concrete embodiment of some process of the unconscious as it emerges in a fertility rite or a puberty ceremony. Very few explore more systematically how the special characteristics of a set of collective documents may reflect the personality dispositions more or less distinctive of a given people or period. An outstanding example of this type of analysis is Sorokin's (1957) study of the forms and content of art in Western history. Through an imposing empirical review in which he classified thousands of paintings, Sorokin showed that, as European society moved from its more stable, hierarchical, religion-centred medieval structure into the changing, fluid, more open and secular industrial phase, there were profound shifts in the forms and content of art, moving from an expression of the "ideational" to a more "sensate" cultural form.

On a more modest scale we may cite Devereux's (1961) assertion that their common possession of "a nightmare vision of the universe and of life" is responsible for the common tendency of certain African, Melanesian, and medieval artists to produce the nightmarish depiction of the human body which characterizes their gargoyle carvings. Something similar might be said of much painting and literature in the mid-twentieth century. Still another example would be Kracauer's (1947) suggestion that the extremely frequent and strong manifestations of sadism in early German films reflect a corresponding tendency in the German character. Of course, we must keep in mind the reservation that such works of art may reflect the personalities of the artists as individuals or as a social group more than they do the population at large or the subpopulation which "consumes" the art.

In recent decades considerable progress has been made in studying the relations between psychologically salient features of culture and the dreams of people living in different cultures. This came about largely because of a growing readiness to study the manifest dream content rather than emphasize only the latent content. There is also an increasing readiness to interpret the dream symbols directly rather than rely exclusively on free association as the key to meaning. More important, once the dream could be seen as a collective document and not merely as a means of understanding the *individual*, the collection of large numbers of dreams from culturally distinct *populations* took on new meaning. The subsequent analysis of these materials may give new substance to the study of dreams as data for culture and personality research (D'Andrade, 1961, Eggan, 1961).

Thus far, not many dream collections have been made, and techniques for analyzing them are not well standardized, so that systematic culture comparisons are rare. However, those which have been attempted are highly suggestive. The dreams of the Yir-Yoront, an Australian tribe, and the American Indian Navaho, have been compared by Walter Sears in an unpublished study cited by D'Andrade (1961). The Navaho have strong inhibitions on expressing aggression within the tribe and are relatively inhibited sexually. These characteristics are apparently reflected in the appearance of fewer dreams among the Navaho in which the dreamer engaged in aggressive or sexual activities.

In the context of the theoretical problems considered here, the study of the influence of personality modes on expressive behavior becomes maximally relevant in the case of the institutionalized forms of expressive behavior. *Religion* is among the most important of the expressive institutions, and it has been widely studied from a culture-personality perspective. Kardiner's (1939, 1945b) pioneering work gave particular attention to religion as a central "projective system" which reflects the impact of the early experiences and basic personality structure of a people.

Pursuing a similar logic, Whiting and a number of his colleagues explored the relation between conceptions of the deity and various aspects of culture. One of these studies classified religions according to their conception of the gods as aggressive or as benevolent toward humans (Lambert, Triandis, and Wolf, 1959). In cultures where the socializing agents treat the child harshly and inflict a good deal of pain, the gods are less likely to be seen as benevolent. Spiro and D'Andrade (1958) found that compulsive ritual to please the gods was more common in societies where infants were treated indulgently and parents were responsive to crying and appeals to help. These studies fail to specify the adult personality characteristic they are studying, but it is clear from the formula provided by Whiting that they *assume* there is such an intervening variable. As Whiting puts it (1961, p. 356): "These linking child-rearing scores have the theoretical status of independent or antecedent variables; that is, they have been assumed to be determinants of personality which [in turn] is assumed to be a mediating psychological process reflected in magic and religion." Modal personality is thus regarded as a determinant of the form and content of religion.

Though it is incidental to our main purpose in this section, we should note that dreams, myths, and religious doctrines are not necessarily (or not solely) "projective" systems in the classical psychoanalytic sense. There seems to be a fairly *direct* reflection in the dream, religion, and myth materials of qualities explicitly emphasized in the culture and presumably internalized in the personalities of its members. Seeking to test the extent to which myths among the Ojibwa and the Eskimo reflected "personality variables from the conscious level or from the repressed unconscious," Parker (1962) showed that the myths tend to "reaffirm and emphasize the consciously held motives and values of the people." To identify art, dancing, and religion as "projective" systems seems to us to prejudge the issue as to the mechanism which links them to modal personality. We have therefore suggested that they be labelled the *expressive* systems of culture and social structure.

PERSONALITY MODES AND TOTAL SOCIETAL SYSTEMS

We have considered the relevance of personality for particular occupations and for broader areas of social action such as political institutions. The next level of generalization involves the relevance of traits of character for the large-scale social system in all its major ramifications. To transform a statement of Ralph Linton's (1949, p. 164) into a question: In every society are there people of a sort who, had they come into the society from the outside with their personalities already formed, would have found it easy and pleasant to learn the society's ways, to accept its values, and to become respected citizens?

We do not as yet have any agreement as to the set of basic personality traits which may be requisite to the functioning of *any* social system, though Inkeles (1968) has prepared a list of such qualities paralleling the functional requisites of any social system developed by a group of Parsons' students (Aberle *et al.*, 1950; Levy, 1952). Kaplan (1961b, pp. 667-669) suggests that the most important and generally significant may be the generalized disposition to social conformity. Though we are not disposed to challenge the importance of this trait, we find it hardly sufficient to deal with all the complex interrelations of personality and social structure.

Traits generally important for the functioning of certain types of societal system have been posited by several writers. For example, Weisskopf (1951) has attempted to specify the character traits associated with industry, the market system, and "mass

civilization." Fromm (1941, 1949) asserts that discipline, orderliness, and punctuality are personality requirements for an industrial society. Kardiner (1945b) has stated that a Comanche would not be psychologically attuned to a system with a high degree of differentiation in function, such as that found in a modern industrial society. Further, Erikson (1945, p. 327) has designated a syndrome of traits "necessary for the functioning of a hunter democracy" such as Sioux society. These include a "combination of undiminished self-confidence, trust in the availability of food supply, and ready anger in the face of enemy interference," along with generosity within the tribe. Inkeles (1966a) has identified a set of personal qualities required by modern as against traditional societies, including a strong sense of efficacy and openness to new experience (see also Pool, 1963).

If we are willing to assume the presence of certain modal personality constellations in various societies, we are, of course, led to consider the *types of interrelations* between modal personality and social system. The first relation to suggest itself is one of perfect congruence between the modal personality structures in the population and the requirements of the social system. Posited as an ideal type in Weber's sense, and not in any evaluative sense, this pattern will be termed *ideal congruence*. We have every reason, however, to expect to find various types of departure from this model.

The most powerful and pervasive source of malintegration of psychic disposition and societal role demands lies in the ubiquitous restrictions which the social order places on the expression of impulses for aggression, sex, oral gratification, and the like. No matter how much society may condition or socialize these impulses, and no matter how exceptionally free it may leave individuals to express them, there remains an irreducible residue of conflict between social demands and psychic need. No man serves in only one status, no matter how simple his society, and since the different statuses in which he finds himself will almost certainly require somewhat different qualities, the probability is great that he will either have some difficulty in integrating these qualities or in some situations will lack the qualities required by a given role. The mere fact of aging, and the accompanying changes in status and in the ability to play culturally defined roles, must contribute independently to malintegration of the demands of personal disposition with the requirements of culturally defined roles. In addition, ideal congruence can be expected only under conditions of great stability. Any significant degree of social change increases the chances that new personality traits will be demanded by society and that the previously required traits will no longer be valued or even useful.

In the following pages we shall discuss three additional types of relationship between modal personality and sociocultural system. They are identified as *unstable congruence*, *institutionally induced noncongruence*, and *characterologically induced noncongruence*. Each of these types will be illustrated with materials drawn from the literature on modal personality structure. Though the illustrations will be chosen predominantly because they exemplify the relationship types posited here, we hope they will also convey something of the range of content and emphasis in the literature on modal personality patterns.

Ideal congruence

This pattern involves a high degree of compatibility between the role demands associated with important status positions in the social system, and the personality constellations of the individuals who must act in those roles. The two are *congruent* to

the extent that the individual can utilize the available opportunities with adequate gratification, and can accept societal demands with minimal pain and anxiety or, more likely, with considerable pain and anxiety that are kept from becoming disruptive by means of both internal and external control mechanisms. It should be noted that the modal personality structures may show many signs of pathology and ego impoverishment, and at the same time be congruent with the social structure. For example, the prevailing religious beliefs and values may, in conjunction with the modes of child rearing, contribute to the widespread development of constricted, impulse-alienated egos. Such personalities may, however, be able to adjust adequately in an external sense if the society can absorb them within appropriate adult roles and contexts (for example, prison guard in a "custodial" prison). Thus, a given personality syndrome may be "normal" in the modal sense, and yet contain many pathogenic features. Fromm (1944) has used the term "socially patterned defect" in this connection.

The concept of congruence figures prominently in the presentations of several authors who seek to relate modalities in character to social structure. For example, Fromm (1941, p. 284) speaks of a situation in which the "social character" acts as a force "cementing the social structure." He notes two aspects of this situation. From the point of view of the individual, his (social) character leads him to act as his social role requires him to act or, as Fromm phrases it, "man develops those traits that make him desire to act as he has to act" (p. 283). At the same time, he finds this action psychologically satisfying. From the point of view of social process, Fromm continues, the function of social character is that it "internalizes external necessity and thus harnesses human energy for the task of a given economic and social system."

Parsons (1949) has developed a very similar formulation. He emphasizes that the structure of the social situation, and particularly the maintenance of institutional patterns, are dependent on the stability of the motivational structure of the members at large, and asserts that, therefore, "A cardinal fact about institutional behavior is that the integrated 'self-interested' elements of motivation and the disinterested moral sentiments of duty tend to motivate the same concrete goals" (p. 311).

This point is now widely recognized, and in one form or another a similar statement can be found in most major theoretical reviews of the personality-and-culture field. Reviewing the literature on personality and culture, for example, Spiro says that when goals are cathected by and serve to gratify personality drives, and when approved roles are perceived as efficient means for achieving those goals, then "not only are the functional requirements of the individual and society satisfied simultaneously, but the functional requirement of each is satisfied by an attribute of the other . . ." (Spiro, 1961, p. 476).

Traditional Chinese society suggests itself as *the* large-scale social system to illustrate the "ideal congruence" posited here. Traditional Chinese society persisted for more than a thousand years without fundamental change in the central structural features of the system. One of the central elements of its social structure is the distinctive Chinese extended family. The related value and behavior system, which Hsu (1948, 1963) has termed the "big-family ideal," emphasized filial devotion and motivation to uphold the ancestral line, and involved the individual in a large and complex network of interlocking social obligations and mutual dependencies based on what Parsons calls "particularistic" criteria. Associated with this pattern was an exceedingly relativistic system of morality—at least in the sense that not abstract moral principle but rather the concrete family obligation governed important decisions involving major alternatives of action. Oriented to the past, the system did not

encourage competition or striving, except perhaps competition *within* the family to excel in the fulfillment of family obligation, and competition *outside* the family to exceed in upholding and extending family ancestral honor.

Though Chinese society has been extensively studied, there are virtually no systematic psychological data on Chinese personality and character, and not much more in the way of even general observation and analysis. A brief annotated list of the total of some two dozen relevant reports may be found in Duijker and Frijda (1960, pp. 97–98). Weston LaBarre, on the basis of personal experience in China, attempted a description of Chinese character structure that may throw light on the way in which modal personality and social structure were integrated in traditional Chinese society. He summarizes the character structure of the average Chinese as follows (p. 380):

... they lack any strong visceral disciplines, such as are so insistent and strong in the "Protestant ethic" . . . The internalization of the superego is weak, and sense of sin nearly absent. The id-demands almost uniformly secure undeterred physiological gratification, and libidinal tensions are low. The ego . . . is sturdy and reality-oriented in the direction of the physical world; but in the patriarchal family it is relatively thin-skinned in its responses to the human world. The average Chinese is cheerful, dignified, discreet, poised, unanxious, proud, secure, realistic, and kindly.

Many of LaBarre's assumptions about Chinese character are supported by a later analysis by Hsu (1961a, 1963). Hsu develops a general scheme of comparative analysis, using the kinship system as its key element. He describes the traditional Chinese system as developing a character type lacking individualism; conservative, with little need for innovation and strongly favoring the status quo; relativistic in morality and disinclined to see the world in black and white terms; lacking an interest in abstraction; highly competitive, but mainly within a framework of advancing family rather than individual goals; and submissive to authority, but only insofar as it can be seen as essentially an extension of the parental and family authority. Many of the implications for societal functioning which inhere in this character type are pointed out by Hsu in a manner highly congruent with LaBarre's analysis.

The direct relationship between these traits of character and traditional Chinese social structure is perhaps not immediately apparent. Certainly one is inclined to be cautious about some of the rather sweeping generalizations suggested by LaBarre. For example, though he puts it in the form of a question, he appears to suggest that the idea of power is "unfamiliar" to the Chinese because they "lack all visceral tension and disciplines" (1946, p. 394). This hardly seems a question to be posed until one is reasonably convinced that the idea of power is indeed uncongenial and unfamiliar to the Chinese, a conclusion on which some recent events cast severe doubt.

Nevertheless, LaBarre's analysis is suggestive. Extreme striving and competition, as has been indicated, must be kept within strict limits in the interest of preserving the internal structure of the Chinese family and the general social system. Certainly the absence of visceral tensions of the type so notable in the Protestant ethic would tend to minimize the propensity toward striving and competitive orientations, as would a weakly internalized superego and high gratification of id demands. The ability to subordinate the self to the family and to accept the exceedingly diffuse obligations it

imposes would be enhanced by what LaBarre terms the Chinese's "superb oral hold on life." LaBarre has further drawn on this orality to explain socially patterned behavior: "Profound satisfaction of the earliest of the great human appetites has brought a willing and unquestioned love of their traditional culture values. The Chinese are traditionalists partly because they really love their parents" (1946, p. 375). Finally, it might be noted that the allegedly relativistic, family-oriented morality could be supported by the weak internalization of superego and the absence of a "sense of sin," as well as by the sturdy ego structure with its reality orientation to the outside world combined with sensitivity to family pressures.

In spite of the limitations imposed by our lack of knowledge concerning traditional Chinese personality modes, the example of China puts us in a position to stress some possible misconceptions about the "ideal-congruence" pattern of personality mode and social system. The ideal type does not assume that the individuals in the society, whatever their personality, will function in all their roles without strain. Neither does it assume that the system operates without the necessity for the application of strong social sanctions. It does assume, however, either that the strain experienced by the individual will be kept under sufficient control to ensure adequate role functioning, or that deviance will be expressed in a manner not disruptive of the social structure—and optimally, that the deviance will be expressed in a manner that is essentially *supportive* of the system. Thus, relatively extreme competitiveness in an individual living in traditional Chinese society would not be disruptive if it could be channeled into competition in excelling in the fulfillment of obligations within the family, or be focused in the outside world on activity designed to increase the prestige or wealth of the family.

Furthermore, the ideal type assumes that where personal deviance cannot be channeled to serve the system, there will be sufficient sanctions to prevent or contain the effects of behavior potentially disruptive to the established system. Certainly the social structure in classical China would appear to have been ideally constituted in this respect, because the central role of the extended family in the social system made the individual fully dependent on it for both his physical requirements and his psychological needs of prestige, status, and self-esteem. To cut himself off from the family was essentially to cut himself off from society and to put himself in a position where every man's hand might be, and indeed often was, turned against him.

The case of classical China also permits us to make the perhaps obvious but important observation that the existence of a pattern of ideal congruence does not contain any *absolute* guarantees against change. China's thousand-year history of continuity came to an abrupt end in the Communist victory, and with it came a series of changes in social structure which must be assumed to be incongruent at many points with the traditional character. Because of numerous restrictions on the flow of information from Communist China, we know substantially less about the interaction there between traditional personality modes and the new social order than is the case for Soviet Russia (see Inkeles, Hanfmann, and Beier, 1958). To understand the change in regime, we must consider historical processes that go beyond the present bounds of the theory of personality and social structure. We shall offer only a few comments on this process here. Certainly the many forces acting to change the traditional pattern of Chinese social structure during the nineteenth and twentieth centuries introduced numerous inconsistencies both in social structure and in the integration of certain new strata into the larger society. Thus, in the

twentieth century, classical China shifted briefly to the pattern of "unstable congruence" discussed in the next section. It may very well have been the absence of any built-in structural mechanism for change such as characterizes many Western societies, indeed the very lack of interest in change noted by LaBarre and Hsu, which increased the likelihood of sudden drastic change. Those experiencing the greatest strain in the system, rather than working for reform, opted for total and violent upheaval, to be followed by an attempted program of total reformation of the very Chinese character (see Lifton, 1961; Schein, 1961).

Unstable congruence

We speak of "unstable congruence" where there is a relatively enduring social system, but one characterized by a high potential for explosive social change or widespread personality aberrancy arising predominantly from the interaction between modal personality types and social structure. In other words, though there is a rough working compatibility between the structure of role patterns and the modal personality types, the individuals in the society experience serious strains through, or residual to, their role performance. These strains are sufficient either to threaten the personality integration of the participants or to impel them to seek resolutions through social action which will seriously disrupt or alter the existing social structure. Further, the instability is generated spontaneously through the development of potentialities *inherent* in the situation; it does not result primarily from the introduction of new *characterological types* or new *institutional forms* brought into the social system from without by conquest, rapid culture borrowing, etc.

In Fromm's terms, the social character no longer is a "cement" for the social structure, but rather becomes an "explosive" force within it. The situation is illustrated on the most general level in Fromm's (1941) discussion of character and its relation to social structure under capitalism. He sees the structure of modern society as making man more independent, self-reliant, and critical, and these traits are considered adaptive both for capitalism as a system and for the individual living in a capitalistic society. But simultaneously with his increasing freedom, the individual in a capitalist society becomes more isolated, alone, and afraid. From the individual in this state Fromm anticipates an inherent reaction, namely, a propensity to search for a new security. The individual is thus driven toward that "escape from freedom" which leads him to respond positively to authoritarian and totalitarian pleas offering him authority, certainty, group belongingness, and purpose, even if at the sacrifice of his self-reliance, freedom, and critical faculties.

At the level of national states, perhaps the best example of "unstable congruence" is Germany of the Weimar Republic. Though hardly a pure type, since the Weimar Republic might be regarded as a new institutional form imposed on an existing character structure, the German situation does, in general, fit the model. The case is of special interest because more has been written about German national character than about any other modern national group (Brickner, 1943; Dicks, 1950; Erikson, 1942; Fromm, 1941; Germany After the War: Roundtable, 1945; Levy, 1948; Lewin, 1948; Parsons, 1949; Rodnick, 1948; Schaffner, 1948). Despite the extremely wide range of interest and background of the individual commentators, however, there is a surprising degree of agreement in their formulations of the central features of German national character. The general trend is summed up by

Henry Dicks (1950, p. 139):

The picture is mainly one of an ambivalent, compulsive character structure with the emphasis on submissive/dominant conformity, a strong counter-cathexis of the virtues of duty, of "control" by the self, especially buttressed by re-projected "external" superego symbols. In this norm-bound, burdened pattern there occur episodic "release" symptoms. Individually they are . . . attacks of rage, as when "unauthorized" encroachments are made on the jealously guarded ego-core. The release symptoms on the group level we have witnessed between 1864 and 1945. . . . Group outbursts are exculpated chiefly by projective mechanisms . . . courage is drawn for those aggressive outbursts from group sanctions in joint loyalty to a good superego leader figure (Bismarck, Kaiser, Hitler) who takes responsibility and so incidentally shoulders the guilt of failure.

The last point in Dicks's presentation is of special importance, for the alleged tendency to surrender to a particular type of authority figure—given impetus in Weimar Germany by defeat in war with its consequent loss of territory, power, and international prestige, and by depression with its effects on personal income, status, and familial authority—has in the literature been most widely used to explain the appeal of Hitler to Germans. As Erikson (1950, p. 293) has phrased it, there is in Reichs-German character a propensity "to approach with blind conviction, cruel self-denial, and supreme perfectionism many contradictory and outright destructive aims." According to this analysis, Hitler presented himself in an image which permitted the expression of these propensities through the projection onto him of responsibility for the consequences, at the same time satisfying frustrated needs for the expression of status and dominance-submission drives. Fromm (1941, pp. 236–37) has made this point as well, stating:

A hierarchy was created in which everyone had somebody above him to submit to and somebody beneath him to feel power over; the man at the top, the leader, has Fate, History, Nature above him as the power in which to submerge himself. Thus, the Nazi ideology and practice satisfies the desires springing from the character structure of one part of the population and gives direction and orientation to those who, though not enjoying domination and submission, were resigned and had given up faith in life, in their own decisions, in everything.

Fromm's last sentence is particularly to be noted, because it suggests that the same social movement may gain support from different groups in the society which have diverse personality modes. The point is illustrated with great force in Devereux's (1961) analysis of participation in the Hungarian freedom revolt of 1956, in which he demonstrates that a considerable range of *different* motivations underlay the *common* act of participation in the anti-Communist uprising.

It also happens that individuals in a given national population with relatively the same modal personality may for situational reasons support rather different and even conflicting social movements. This may be illustrated by the finding of Ringer and Sills (1953) that, in Iran, those who supported the Communists and the Fascist political movements seemed to have similar personality dispositions. It has, indeed, been proposed (Inkeles, 1961) that personality factors may affect mainly the *style* of political action preferred by individuals, with their socioeconomic status being much more

important as a predictor of the choice of politics along the conservative-liberal economic dimension. The possibility of these complex combinations and interactions poses an important problem for the establishment of any general theory of the relation of modal personality and the social order.

Institutionally induced noncongruence

In this situation, there arise institutional changes so marked that the society's relatively well-established and internally stable modal personality types experience serious strain in meeting the new role demands made on them. This does not imply that such strain will arise whenever major institutional change intrudes into a situation of well-established integration of personality mode and social system. On the contrary, such formal institutional change, even when of strategic importance from a structural point of view, may take place without resulting noncongruence. This will be the case where the pattern of institutional change continues to provide roles that, however new their content, are yet compatible with the basic personality orientations in the population. Consequently, even under conditions of extremely rapid acculturation, one need not necessarily expect institutionally generated noncongruence. Thus, one may assume that in an American Indian tribe in which competition for prestige is prominent and this competition is closely associated with the acquisition of property through trading, saving, etc., the intrusion of the American white pattern would be much less disruptive than it would be for a warrior democracy like the Sioux (see Erikson, 1950). Much the same point is made in Margaret Mead's (1956) account, in her *New Lives for Old*, of the remarkable adaptation of the Pacific Island Manus to large-scale contact with Western civilization.

Among modern national states, probably the most striking example of large-scale institutional change generating noncongruence between modal personality type and social system is found in the Soviet Union. As in the case of Germany, the special role of Russia in current world affairs, particularly in relation to the United States, has made it the object of extensive comment in studies of national character (for example, Dicks, 1952; Erikson, 1950; Goror and Rickman, 1949; Inkeles, Hanfmann, and Beier, 1958; Mead, 1951a). Again as in the case of Germany, despite important differences in the characterization produced by the various authors, differences which must unfortunately be neglected here, there has been a rather impressive degree of agreement among them. This applies to their description both of traditional Russian character and of the impact of the Soviet system upon it. We shall restrict ourselves to two researches based on extensive and systematic study of individuals.

Among the characteristics that Dicks attributes to Russian national character are extreme mood swings, impassiveness, apathy, and a sense of futility; the felt need for an external restraint combined with a deep-seated feeling of the essential arbitrariness, harshness, and distance of authority figures; the introjection of guilt; and so on. Most important from the point of view of our discussion, however, is Dicks's treatment of Russian character as essentially an oral type, with exceedingly strong drives for loving protection and security, oral gratification, and warmth and spontaneity in interpersonal relations. Moreover, Dicks stresses that there is a conspicuous absence in Russian character of those traits that have given their stamp to modern Western social behavior: "The whole complex connected with the acquisition and husbandry of

property; methodical orderliness, neatness, punctuality and regularity of procedure, habit and protocol; emphasis on personal hygiene and sensitiveness to dirt, odors, and disorder; need for privacy and seclusion . . ." (1950, p. 140).

The personality type represented by the traditional "oral" Russian peasant may indeed have been well attuned to a village-based, communal-type peasant economy, set in a large and sprawling bureaucratic state characterized by laxness, inefficiency, ineffective centralized controls, etc. The Russian revolution and the ascent of the Bolsheviks led to the imposition from above of a radically new social order. The new government attempted rapidly to institute large-scale industrialization, to reorganize agriculture along "factory" lines, and to establish an elaborate governmental apparatus dedicated to principles of efficiency, planning, and extreme political controls. Essentially, therefore, the population with the traditional "oral" Russian character structure was shifted to a new social order which maximized demands for order, punctuality, precision, regularity, discipline, hierarchical authority, etc. An added complication derived from the characterological propensities of the Bolshevik elite, which manifested a strong need "to mold and master material, including human vagaries, to impose rigid control, to be rational, contained, orderly . . . to achieve punctuality, order and 'output' of production" (1950, p. 141). This elite, with its essentially "anal" character propensities, laid great stress on cheerfulness and the virtues of sobriety, punctuality, discipline, and avoidance of waste. It carried forward its program of social change in the shortest possible time span, under extreme self-imposed pressures, and with relative harshness and unconcern for private interests and welfare.

In assessing the Soviet situation, Dicks states: "It is in the sphere of internal and especially political and economic pressure on the individual occasioned by the pursuit of the Party goal, that the chief tensions appear between the official and private goal orientations of a proportion of Russians" (1952, p. 123). By implication, a major contribution to this conflict, and to the observed malaise felt by so many former Soviet citizens in response to the Soviet system, stems from the incongruence between the demands of the system and the characteristics of the leadership, on the one hand, and on the other hand, the traditional modal personality constellation in large numbers of Soviet citizens, in particular the Great Russians who constitute about half of the population.

Many of Dicks's conclusions were confirmed in a later and more systematic study of a large sample of Soviet refugees, undertaken at the Russian Research Center of Harvard University. In summarizing the results of this investigation, based on the analysis of a complex battery of projective tests and depth interviews, Inkeles, Hanfmann, and Beier (1958) found orality and the need to submit to authority less marked than did Dicks. On most other points their assessment of the Russian character agreed with his. More important for our interest in institutionally generated non-congruence, however, they attempted to specify in some detail the points at which the traditional Russian character was at variance with the desires and institutional patterns of the new regime. Examples of noncongruence which Inkeles, Hanfmann, and Beier offer are: strong need for affiliation as against the regime's constant attack on and infiltration of primary face-to-face units; strong needs for dependence as against the regime's clamoring for will, determination, and extra effort to overcome obstacles; general expansiveness and emotional expressiveness as against the regime's emphasis on control, formality, orderliness, and rules. In summary, the authors

found "a high degree of incongruence between the central personality modes and the dispositions of many Russians and some essential aspects of the structure of Soviet society, in particular the behavior of the regime." Though most of the popular grievances of the refugees from Russia in the 1940's were based on real deprivations, economic and political, "the dissatisfactions appear to be even more intensified and given a more emotional tone, because they were based also on the poor 'fit' between the personality patterns of many Soviet citizens and the 'personality' of the leaders as it expressed itself in the institutions they created, in their conduct of those institutions and the system at large, and in the resultant social climate in the USSR" (1958, p. 16).

Characterologically induced noncongruence

In this case, a fully elaborated and relatively stable modal personality type is introduced into an already established institutional order with which it is not compatible. Clearly, this type resembles in many respects what we have termed institutionally generated noncongruence. In the case of characterologically induced noncongruence, however, the newly introduced element is a modal personality type rather than an institution, and the analytic focus is on what happens to the institution rather than to the participating individuals. Thus, the strains experienced by the relaxed "oral" Russian when a strict "anal" leadership rigorously imposed a bureaucratic, rigid industrial order in Soviet Russia may be viewed, when the focus is on personality, as *institutionally* induced noncongruence. But when the focus of interest is on the factory as an institutional form, then the resultant malfunctioning of Soviet factories may be termed an instance of characterologically induced noncongruence.

Insofar as total societies are concerned, characterologically induced noncongruence probably exists as a pure type only in hypothetical situations. It would probably exist in pure form if all the members of some ongoing society were quite suddenly removed and replaced by another population with a different personality structure, who would then step into the relevant status positions and carry on in the socially defined roles. On the level of empirical reality, the situation we term characterologically induced noncongruence is roughly approximated in those instances where important positions in an existing social order are taken over by conquering war groups, as in the Mongol invasions of Russia and China. It is also roughly approximated when in an established society there is a heavy immigration of a personality type or types significantly different from the type which originally gave rise to the system.

In modern times the most striking example of the latter situation is to be found in the United States. The waves of immigrants from Germany, Italy, Ireland, and Eastern Europe meant the introduction into the United States of new personality types who took up established status positions in the structure of a system presumably more or less uniquely attuned to the psychological "products" of British culture. The adjustment process has stimulated extensive comment, though the predominant assumption has been that the institutional pattern remained stable while a new character type emerged (Gorer, 1948; Mead, 1942). What some feel to be the imminent transformation of American society, particularly in regard to the emphasis on freedom of thought and conscience, may be related to the relative weight in the social system of these new characterological types, particularly as represented in the children of the immigrants.

The concept of characterologically induced noncongruence does, of course, have wider applicability if one focuses on some particular position within the social structure into which there enter personality types developed in and better attuned to other role positions in the society. Where this is thoroughly institutionalized, the resultant tension is usually characterized as *structured strain*, a situation which may be illustrated in a wide variety of positions and societies. For example, the Comanche warrior trained to the show of aggression and the exercise of leadership does not find congenial the role of the aged with its demand for relative passiveness and dependency. Or at the other pole, the young middle-class American, rigorously trained in moral absolutes and taught by rote, may find disturbing the freedom of thought and the conflict of ideas encouraged at a more progressive university (Stern, Stein, and Bloom, 1956).

Structured strain is often followed by highly patterned deviant responses, and it is no surprise that at such points in the system sorcery, witchcraft, and compulsive conformity or rebellion are often localized. Frequently such strains, when recognized, are described merely as "role conflicts." This may obscure the fact that the strain derives not so much from the incompatibility of the demands made by the roles—often sequentially held—as from the incompatibility of a personality type well attuned to one role yet poorly adapted to another. The personality types, however, are new only to the specific role and not to the social system, and indeed may be well adapted to other standardized roles in the society. The problem might, therefore, be regarded more as a matter of cultural integration than of characterological noncongruence.

CONCLUSIONS

The initial difficulty facing any effort to relate modal personality to social structure or culture stems from defects in the definition and measurement of modal personality. As we have indicated, most descriptions of modal personality are not derived directly from study of the personality traits of adults. Most often, characterizations of modal personality are inferred from analysis of *infant and child care disciplines*, of the *institutionalized behavior* of individuals acting in their social roles, or of *collective documents* of the given population.

Clearly, insofar as these elements are *part* of social structure or culture, to define character in terms of any one of them is merely to relate one element of culture or social structure to another. When the posited character structure is related back to the sociocultural phenomenon from which it was derived, then the correspondence of the two phenomena is given by definition. Even when the derived modal personality pattern is related to some element of culture or social structure other than the one from which it was derived, it is not personality and some element of the sociocultural system that have been related, but rather two elements of the system. In other words, this procedure is a test of the integration of the culture, and not of the congruence of personality and culture.

The projection of cultural themes and institutionalized behavior onto personality is perhaps only slightly more prevalent than the projection of character onto culture and social structure. That is to say, characteristics are attributed to the culture or

social structure not on the basis of independent measures of what exists, but rather on the basis of what one should *expect* in the sociocultural realm, judging by the delineated modal personality.

For example, Gorer (1948, p. 96) states that the younger son in the American family believes that he may behave irresponsibly, secure in the knowledge that his older brother will always get him out of trouble. Just so in the American Congress, says Gorer, the "older brother" Senate is more responsible in its political action than the "younger brother" House of Representatives. The analogy posited is an interesting one. But it seems fair to suggest that before these two facts are *related*, the *existence* of the facts ought to be independently verified. Even if we assume that the pattern attributed to the behavior of younger brothers in the American family is an accurate one, what evidence is there that indeed the Senate is more "responsible" than the House of Representatives? This proposition is, on the surface, so questionable that it suggests a simple projection of individual characteristics onto the political institutions of the society.

In short, to establish systematic interrelations between modal personality and cultural or institutional patterns, we must measure independently the elements to be related. This requires that statements about modal personality be derived from the study of *individuals* and not from cultural themes or institutional structure, and no less that such themes or structure be derived from data and analysis *independent* of that from which personality modes are derived. To do anything less is to run grave risks of circular reasoning, and certainly to minimize the chances of adequately relating personality to sociocultural structure and functioning.

A second problem, perhaps the most controversial one in this field, concerns the *causal connections* between modal personality and sociocultural matrix. Kardiner (1939) and Roheim (1947) attribute a direct causal role to character in explaining the *origin* of certain institutions and cultural themes, particularly in the realm of religion, folklore, witchcraft, etc. On the whole, the authors in this field tend explicitly to reject the frequent charge that they interpret social institutions as being "caused" by the characterological traits or propensities of the population of any given society. This charge, made rather heatedly by Orlansky (1949), is specifically denied by Margaret Mead (1951b, p. 74) and Erikson (1945).

Despite these denials, however, many writers seem to assume that national character operates as a simple and direct cause of certain institutions. Such a relationship seems to be implied in the example cited above from Gorer's study of the American people. A similar causal connection is more or less explicitly postulated in LaBarre's work on the Chinese; for example, he says that the satisfactory oral relationship during early personality development "is connected with the magnificent 'sanity' and hard-headedness of the Chinese" and with "the genius of Chinese political philosophy" and the alleged absence of aggressive warfare in the history of China (1946, p. 377).

Most of the institutions in any society will be found to have been present over a period of generations. They can, therefore, hardly be caused by the contemporary character of the population in the given society. Upon careful study, other patterns are recognized as products of acculturation. Still others form a part of complexes that have their own internal structure, and are carried along as part of the larger complex. For example, the modern factory system assumes certain precise differentiations of function and responsibility, interpersonal relationship patterns premised

on predominantly universalistic criteria, the institution of schedules and other precise time arrangements, etc. Within certain specifiable limits, these patterns go with the factory system wherever it may be introduced.

We have emphasized the hazards of attributing to personality modes a direct causal role in explaining the presence of a given culture pattern or institutional form. At the same time, we wish also to emphasize, and to encourage study of, the *causal impact of personality on the currently evolving social structure*. Modal personality may be extremely important in determining which new cultural elements are accepted in an acculturation situation, which institutional forms persist in a society, and changes in the character of such institutions.

For example, in the development of the young Alorese, food deprivation and anxiety arise from the behavior of the mother *vis-à-vis* the dependent child. The Alorese, furthermore, display a marked preoccupation with food. One may then make the inferential leap that these psychological problems with food are direct causes of the custom of sacrifice and the emphasis on food symbols in the surrounding religious ritual. But as DuBois (1941) points out, the system of sacrifice is a widespread Indonesian custom "and hence could hardly be caused by food deprivation in Alor." DuBois goes on to note, however, that the characterological problems of the Alorese give a particular local meaning and special support to the institutional form of sacrifice, and that this institutional form has a somewhat different character, meaning, and psychodynamic support in other Indonesian societies. We agree with DuBois and others in regarding personality as an important determinant of stability and change in sociocultural forms. The task is to conceptualize theoretically, and to demonstrate empirically, the ways in which personality factors and sociocultural factors operate conjointly to facilitate or hinder social change.

Even where the positing of a simple causal relationship is carefully eschewed in the national-character literature, we often find an *assumption of isomorphism* between personality modes and institutional patterns. This is a questionable assumption and it begs the real issue. For example, the same personality orientation may be expressed through markedly different modes of action. Ringer and Sills (1953) found, in their study of Iran, that the extreme political conservatives and the extreme political radicals resembled each other in several traits more than they resembled the more moderate political groups. We must study the psychological meaning of participation for the actual participants in a sociocultural process if we are to establish with any confidence the connection between personality modes and the given institutional pattern.

In short, investigators sometimes reason by analogy from a (demonstrated or assumed) personality mode to the structural pattern of institutions, and posit an overly simple causal relationship. Probably no other aspect of these studies has aroused so much criticism or so much intensity of feeling among critics from other disciplines—often with the effect that the critics have failed to give serious consideration to the promising insights presented by these authors. Further, the attribution of simple causal connections, with their element of apparent finality, has obscured important problems of the dynamic interrelations of modal personality patterns and sociocultural phenomena.

We criticized earlier the tendency of many investigators to assume a single personality mode for the population of any given society. There is often a matching tendency to describe the culture pattern and social structure as a comparably limited

or unimodal phenomenon. We find, for example, little active recognition of what Florence Kluckhohn (1950, 1961) has called the "variant orientation profiles" available in any culture in addition to the dominant profiles. Moreover, in the institutional realm folklore, religion, witchcraft, and similar complexes have until recently received the major share of attention. Within the past decade, increasing interest has been shown in a "personality and social structure" approach to the massive economic, political, and bureaucratic institutional complexes that loom so large in modern industrial society. This line of inquiry will, we believe, contribute significantly both to the development of systematic theory and to our understanding of institutional functioning and change.

Analysis in terms of a single (unimodal) personality structure and a simplified, monolithic depiction of culture and social structure often leads to a comforting but unreal impression of congruence between personality and sociocultural systems. There may be a "strain toward consistency" in culture, and this may be matched in personality and social structure and in the resultant totality of any given social order. Yet the analyst can hardly abet science if he himself becomes a captive of this strain toward consistency.

The danger of this overly simple view of modal personality and sociocultural phenomena lies not so much in what it leads us to do as in what it encourages us not to do. The concept of modal personality holds much promise for increasing our understanding of large-scale systems as it is brought to bear in the study of institutional functioning. The role of modal personality in the operation of social sanctions is only beginning to be understood. Its influence in rendering effective or hindering the functioning of the major institutional complexes of society—kinship structure, social stratification, the economic order, the political system—is yet to be explored in detail. Movements of protest, the rise of elite groups, and major programs of social change represent but a few of the major problem areas in which the causal influence of modal personality patterns should be more fully described and assessed.

The analysis of these significant problems requires a rich and diversified description of modal personality trends that takes account of major and minor modes, of the diverse propensities within any given mode, of the conditions that bring these factors into effective play, of the social groups that are characterized by the various modes, and so on. Such analysis also requires a complex description of cultural norms and institutional structure, one that takes cognizance of their range and diversity, their internal structural imperatives, and their dynamic interrelations. As the complexities of both character and sociocultural systems are more fully acknowledged, conceptualized, and described, major progress will be made in our understanding of the ways in which personality modes enter systematically into the functioning of social structures and the coherence of culture patterns.

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Collective Behavior: Crowds and Social Movements

STANLEY MILGRAM, Harvard University

HANS TOCH, Harvard University

Crowds and social movements are two fields in a larger area of study usually termed mass phenomena (Brown, 1954), collective dynamics (Lang and Lang, 1961), mass behavior (König, 1958; Lederer, 1940), or collective behavior (Smelser, 1963; Turner and Killian, 1957). The last term is the most popular nowadays. It refers to group behavior which originates spontaneously, is relatively unorganized, fairly unpredictable and planless in its course of development, and which depends on interstimulation among participants. Blumer (1964) includes within the field such diverse phenomena as "collective excitement, social unrest, crowd behavior, riots, manias, crazes, fads, mass alarms, mass hysteria, public revolts, protest movements, rebellions, primitive religious behavior, reform movements, and revolutionary movements."

Collective behavior is bordered on three sides by other social processes. It can be set apart from the actions of very small groups, such as a street fight between two men. A minor but worrisome catch here is that the line between small and large must be arbitrarily drawn, and, in practice, tends to delineate whatever groups happen to prove interesting to the investigator who draws it.

Among larger groups, collective behavior can be distinguished from unformed aggregates and social institutions. Unformed aggregates are large numbers of people in a given location who have no interaction with each other, and engage in no joint activity.

Professor Milgram is now affiliated with the Graduate Center at The City University of New York; Professor Toch is at the School of Criminal Justice, State University of New York, Albany. The first author is principally responsible for the portions of this chapter dealing with crowds, and the second author for the portions dealing with social movements, as well as the case study of the Watts riot. The authors wish to acknowledge their indebtedness to Mr. Jeffrey Travers, who prepared materials on mathematical theories of the crowd, to Eleanor Rosch Heider for carrying out two empirical studies referred to in the text, and to Drs. Barry McLaughlin and Charles Thrall for editorial assistance. Mrs. Elinor White prepared the illustration on page 528. This chapter covers published material through 1965.

The conceptual requirements of spontaneity, planlessness, and relative lack of organization distinguish collective behavior from established groups such as the Methodist Church, Harvard University, and the Republican Party. Groups of this type are known to sociologists as social institutions, and their sum makes up the matrix which we refer to as "conventional society." It thus becomes possible to characterize collective behavior as taking place *outside* the pale of social convention.

The three distinctions we have drawn are areas of transition rather than demarcation. Different types of groups evolve, and tend to change from one classification to another. Thus a small group can become large by recruiting members, and an unformed aggregate can begin to qualify as a collective phenomenon when a joint stimulus is noted and responded to or when participants begin to respond to each other. Collective behavior sometimes becomes stabilized and organized, and begins to acquire a respectable place among conventional agencies. This transformation, which has been studied under the heading of "institutionalization," is a key mechanism of social evolution.

In the present chapter, we shall focus on two aspects of collective behavior: crowds and social movements. A fuller treatment of crazes, fads, and fashion may be found elsewhere (Doob, 1952; Flugel, 1930; Mackay, 1841; Ross, 1908; Sapir, 1935; Tarde, 1903).

WHY STUDY COLLECTIVE BEHAVIOR?

Why does the study of collective episodes deserve serious attention by social psychologists?

1. Fidelity to the historic traditions of the field calls us to a study of these phenomena. Ross's *Social Psychology* (1908), the first textbook bearing this title, devotes fully a third of its contents to the description and analysis of crowds. McDougall, whose text appeared the same year, applied an instinctivist interpretation to crowd action. Social psychology was founded on the topics of crowds and collective behavior. To drift from these concerns is to appropriate the name of the discipline while abandoning its most challenging problems.
2. The study of collective behavior can extend our conception of social behavior and provide fresh insights into the limits of human action. Many actions which seem beyond the range of human capability, both from the standpoint of heroism and of destruction, come to light in collective episodes.
3. Intensified crowd activity often accompanies the rapid restructuring of society and crowds may themselves act as vehicles of social change. The field of collective behavior serves as a bridge between individual psychology and social evolution. Crowds, riots, and social movements need to be understood in their roles as both catalysts and indicators of historical change.
4. Moreover, there is scarcely a significant facet of social behavior that does not receive extreme expression in an episode of collective behavior. Prejudice finds its most exaggerated expression in the lynch mob (Dollard, 1937). The idea of "authoritarianism" calls to mind a mass cheering Hitler at Nuremberg. Many of the variables of concern to social psychologists are brought to their extreme form in the crowd, and it would be foolish to ignore this densely rich subject matter.

5. The study of collective behavior helps anchor social psychology to a set of significant problems, and prevents exclusive reliance on narrowly conceived techniques. The study of crowds serves as a corrective to a social psychology that has abandoned interest in distinctively *social* phenomena, that is, to concepts whose very definition depends on an aggregate of actors. And an interest in crowds directs the scientist's vision beyond the one-way observation room to meeting halls and the outdoor urban setting where protests are held, rallies take place, and the spontaneous interactions of men occur. All this can only have a tonic effect on a discipline periodically enfeebled by academic preoccupations not tied to the real social world.

6. There is no more demanding task in social psychology than to explain the bases of stability in the everyday social world. On the whole, life in society proceeds smoothly, and we do not easily perceive the conditions underlying social tranquillity. Social upheavals, in the form of riots, panics, and revolutionary social movements, because they represent breakdowns of the existing social order, illuminate the usual bases of stability. They demonstrate in more dramatic or visible form the processes that are ordinarily disguised or that are taken for granted in a harmoniously functioning social system. In this respect, collective behavior can serve the same function as neurosis in the understanding of personality—as a point of deviance from which routine, normal functions come to be understood.

7. No discipline other than social psychology is naturally suited to the scientific treatment of collective behavior. If social psychologists do not take up the job of understanding riots, panics, and social movements, who will? Historians devote attention to particular historical episodes involving crowds (Michelet, 1848), but explicate the occurrence of single events without seeking principles common to all crowds or social movements. Economists deal only with the limited pecuniary aspects of financial crazes and panics, and restrict themselves to a rationalistic explanatory model inadequate to the needs of the field (Samuelson, 1958). Legal scholars, though occasionally called upon to apply juridical thinking to crowd phenomena (as in the drafting of riot laws), are less concerned with the causes of collective outbreaks than the assignment of criminal responsibility (see Mannheim, 1965, pp. 654f). Only social psychology, with its concepts astride the two disciplines of psychology and sociology, defines its field in a manner that places the study of collective behavior at the core of the discipline.

I. CROWDS

Crowd is a generic term referring to highly diverse conditions of human assemblage: audience, mob, rally, and panic all fall within the definition of crowds. Common to these terms is the idea of human beings in sufficiently close proximity that the fact of aggregation comes to influence behavior. Crowds occur frequently in social life, under some circumstances become the focus of society-wide concern, and during the past century have been subject to scientific analysis on a rudimentary level.

AN EMPIRICAL SURVEY

Even if one were to approach the topic of crowds in ignorance of all scholarly works written on the subject, the main theoretical issues could be reconstructed by scrutiny of the crowd incidents reported in the press. As an example, we may consider 100 headlines from the *New York Times* for the year 1964 (Table 1), covering a representative group of crowd incidents.

The diversity of crowd incidents seems, at first, staggering; the incidents do not conform to any single pattern. Riots, mobs, panics, strikes, and rallies all involve crowds, yet seem dissimilar in important respects. An appreciative crowd acclaiming the Pope (January 5) is different from a murderous riot between Malays and Chinese (September 5). Yet if both are to be assimilated to a common area of study, the differences, as well as the similarities, must be made clear.

Ordinary language provides an initial basis for sorting the diversity of crowd phenomena. A *crowd*, according to common usage, is a large number of persons gathered so closely together as to press upon each other. Most common is the everyday *street crowd*, in which a group has assembled around a point of common interest. Other well-known types of crowds are the *mob*, "a tumultuous crowd liable to acts of lawlessness and outrage"; a *riot*, a "violent disturbance of the peace by an assembly of persons and frequently involving the attack of one group upon the other"; and *panic*, in which a "feeling of alarm and fear, originating in some real or supposed danger, leads to extravagant and injudicious efforts to secure safety" (*Oxford English Dictionary*, 1933).

Brown (1954) has presented a more refined taxonomy of crowds, shown in Fig. 1. Following Park and Burgess (1921), he divides the field into two types of crowds: active and passive. To the former he assigned the word "mob." Mobs are classified into four types, according to the behavior displayed by each: *aggressive* (lynching, rioting, terrorizing), *escape* (panic), *acquisitive*, and *expressive*. Passive crowds are mostly audiences. (In Brown's schema the distinction between an audience and an expressive mob is not clear.) But there are few headlines that do not find a slot in Brown's taxonomy, as scrutiny of Fig. 1 will show.

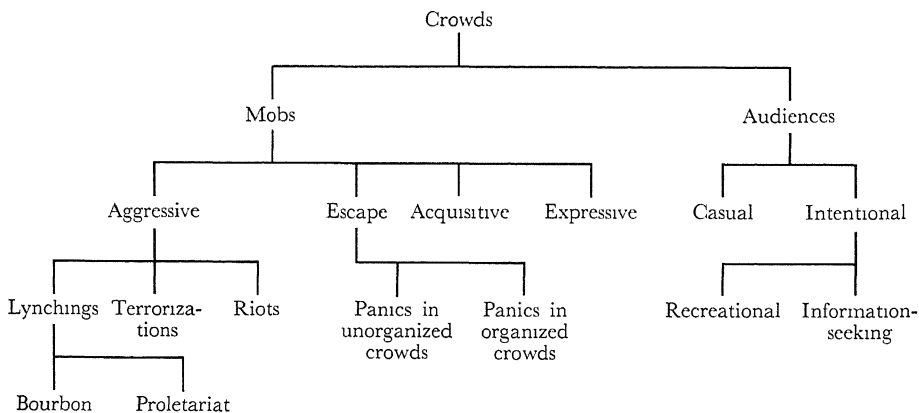


Fig. 1. *The varieties of crowds, according to Brown. (From Brown, 1954.)*

TABLE 1

100 HEADLINES FROM THE *NEW YORK TIMES*
DEALING WITH EPISODES OF COLLECTIVE BEHAVIOR IN 1964

<i>Date</i>		<i>Headline</i>
Jan.	5	Pope Acclaimed in Holy Land; Surging Crowds Surround Him As He Follows Path of Jesus
	7	Rome Gives Pope Tumultuous Welcome on Return From Holy Land Pilgrimage/ Pontiff Blesses Cheering Crowds
	8	Algerians Riot in Oran to Protest Unemployment
	11	Panama Demands Canal Treaty Revision; U.S. Embassy Evacuated; 20 Die in Riots; Johnson Asks Calm
	13	Army Takes Over Calcutta Areas/ Houses Burned in Spreading Hindu-Moslem Violence
	14	Chinese Throngs in Anti-U.S. Rally/ Peking Continues to Assail "Atrocities" in Panama
	24	City Hall Crowds Disrupt Hearing on Rent Control/ Fights, Cat-calls, Sitdowns and Occasional Hysteria Erupt in Council Hall
	24	School Boycotts Are Set in 5 Cities/ Movement Spreading from N.Y. to Chicago
	31	Unruly Crowd Forces Negroes to Cancel Cleveland Picketing
Feb.	1	Rent Strike Due to Double in Size/ Tenants in 225 Buildings to Join Movement Today
	2	Integrationists Hold Up Traffic in Carolina City
	4	Boycott Cripples City Schools; Absences 360,000 Above Normal; Negroes and Puerto Ricans Unite/ Pickets Peaceful
	13	Nixon Deplores Racial Boycotts/ Says in Ohio Mass Protests Damage Rights Cause
	13	Wild-Eyed Mobs Pursue Beatles/ Dozen Girls Injured Here in Fer-vent Demonstrations
	23	10,000 at Fiesta Cheer Presidents/ Mexican-U.S. Friendship is Theme at Sports Arena
	27	Police Dogs Balk Maryland March/ Fire Hose Used to Disperse Negro Students Protesting at Princess Anne
March	6	Violence in Rwanda Is Laid to Agitators
	7	Bridge Sitdown by CORE Blocks the Triborough/ 6 Held After Demonstration on 125th St. Approach During Evening Rush
	11	Thousands Flee Midwest Flood/ Ohio and Tributaries Sent Over Banks by Rain
	16	700 Students End Wild Spree Here/ Brawls Erupt in Private Parties at Commodore—150 Youths Evicted

(Continued)

TABLE 1 (Continued)

<i>Date</i>	<i>Headline</i>
March 23	1,000 in Harlem Cheer Malcolm X/ "Ballots or Bullets" Program Urged by Black Muslim
25	Rioting Negroes Stone the Police in Jacksonville/ Mob Burns Car and Beats Newsman—Troopers Join in Patrolling the City
27	37 Who Saw Murder Didn't Call the Police/ Apathy at Stabbing of Queens Woman Shocks Inspector
29	College Students Hunt for Riot as Revelry in Florida Goes On
April 1	Curfew Restored by India to Avoid Steel Town Riots
10	94 Religious Zealots Dance Into Israeli Jail
12	226 Held in Sit-Ins in San Francisco/ Auto Showroom Target of Protests Over Hiring
18	Shea Stadium Opens With Big Traffic Jam/ 50,312 See Debut—Motorists and Mets Are the Losers
21	Stall-In Leaders Reject Plea and Vow to Tie up Traffic to the Fair Tomorrow
23	Fair Opens, Rights Stall-In Fails; Protesters Drown Out Johnson; 300 Arrested in Demonstrations/ Rain Soaks Crowd
23	7 Are Injured as Police Seize Demonstrators Blocking Doors on IRT Train
24	Goldwater Denounces Disorder of Mass Rights Demonstrations
27	Sunday Crowds Swarm to Fair/ Traffic Heavy But Smooth
May 4	Bulgarians Riot at Sofia Church/ Hundreds Reported in Clash With Police After Ban on Easter Midnight Mass
5	2 Versions Given of Riots in Sofia
6	Rape Victim's Screams Draw 40, but No One Acts
19	Rights Turnout Here Falls Short of Leaders' Goal/ School Rally Draws 4,000 to 5,500 Compared with "15,000 and 1" Sought
25	300 Dead in Lima as Rioting Erupts at Soccer Match/ Crowd at Stadium Infuriated by a Referee's Decision—Emergency Declared
29	1.5 Million View Rites for Nehru/ Procession Route Jammed as Indians and Foreigners Pay Last Respects
31	Rally to Protest Housing is Held on Harlem Block
June 4	Seoul Area Put Under Army Rule When 10,000 Riot/ Police Force in Capital is Overpowered by Mob of Marching Students
5	Fire Causes Panic on Brooklyn IND/ 47 Injured as 1,000 Rush From Train amid Smoke and 3d Rail Flashes
13	Students Hail Shah of Iran at Airport

TABLE 1 (Continued)

<i>Date</i>		<i>Headline</i>
June	16	Three Killed in British Guiana as Racial Violence Flares Again
	19	16 Rabbis Arrested as Pool Dive-In Sets Off St. Augustine Rights Clash
	20	Whites Repulsed in St. Augustine/ Police Block Their Attempt to Get at Negro Marchers
July	2	Crowds at Fair Dwindle in Heat/ Lowest Attendance Since Mid-May Is Recorded
	7	6 St. Louis Policemen Hurt by a Brick-Throwing Mob
	13	40,000 in Parade Against Arizonian
	13	300 Riot 3 Hours in Henderson, N.C./ Tear Gas Dispels Whites and Negroes Outside Diner
	15	Parisians Dance on Bastille Day/ Screaming Jets Open Parade Viewed by 100,000
	17	Big Throng Sees Thorez Funeral/ Suslov Delivers Eulogy—Crowd Delays Cortege
	18	Teen-Age Parade Protests Killing/ 200 March in Yorkville as Police Watch—Shooting of Boy Being Investigated
	19	Thousands Riot in Harlem Area; Scores are Hurt/ Negroes Loot Stores, Taunt Whites—Police Shoot in Air to Control Crowd
	20	Violence Flares Again in Harlem; Restraint Urged/ 19 Hurt in New Outbreaks Near Scene of the Funeral for Boy Who Was Slain
	25	Rochester Police Battle Race Riot/ Arrest of a Negro Set Off Melee by 1,000 in 50-Block Area of Upstate City
	30	Newark Negroes in Orderly Rally/ Rain and Pleas by Leaders Keep Crowd Down to 300
Aug.	2	Vacationers Jam Roads from Paris
	4	New Racial Riot Hits Jersey City as Parley Fails/ Bombs and Bricks Hurlled by Gangs of Youth—400 Policemen Called In
	4	Youth Found Dead After Mod Clashes with Rocker Gang
	5	Scattered Violence Keeps Jersey City Tense Third Night/ 400 Policemen Confine Most of Rioters to Two Sections—Crowds Watch in Street Despite Danger
	7	Singapore Communal Riots Flare Anew, Leaving Four Hurt
	7	Boy's Hand Cut Off by Gang on Street
	11	5,000 Stage a Peaceful Protest in Athens on Turkish Air Raids
	13	Paterson, Elizabeth Hit by New Violence
	14	Teen-Agers Turning From Riots to Jobs

(Continued)

TABLE 1 (Continued)

<i>Date</i>		<i>Headline</i>
Aug.	15	Hughes Commends Police in Rioting/ Calls on Them to Continue "Firm Resistance"
	17	50 Injured in Riot in Chicago Suburb/ Many Whites Are Hurt as Negroes Hurl Stones—2 Persons Are Shot
	23	Quiet Crowd Greet's Beatles in Canada
	29	Concentration of Squealing Teen-Agers Noted at Hotel/ Phenomenon Traced to English Quartet Called Beatles
Sept.	5	8 Killed as Singapore Race Riots Erupt
	7	A Teen-Age Mob Battle Police/ National Guard Called Out in Hampton Beach, N.H.
	15	Protest Over Food Prices Leads to 278 Arrests in India
	25	Leontyne Price Mobbed at Soviet Performance
	28	7 Killed by Indian Police as Food Rioting Spreads
	28	Vietnamese Repel Mob By Pulling Grenade Pin
Oct.	7	29 Hurt in Melee in De Gaulle Visit/ Argentine Police Fight Mob of Peron's Supporters
	15	Two Slain in Portugal in Riot to Retain Priest
	15	No One Will Arrest 10 Pickets Chained to U.S. Court House
	17	Rhodesians Moving to Quell Violence
	18	Scores Injured at Peron Rally/ Frantic Buenos Aires Mob Urges Dictator's Return
	25	50,000 March in New Delhi in Protest of Food Crisis
	29	Martial Law Ordered in Sudan As Riots and Violence Continue
	30	Toll Is at 20 as Sudanese Forces Subdue Rioters
	30	San Juan Students Parade in Protest
Nov.	1	Carolina Crowds Hail Goldwater
	3	3,000 Youths Riot Outside Theater
	4	Kennedy Greeted by Adulation of Screaming, Youthful Crowd
	11	Indians Stage Food Riots in Kerala
	11	Campus Protests a Ban on Politics
	26	New Saigon Riots by the Buddhists Bring Crackdown/ Schools Closed, Curfew is Extended After Attacks
	27	Three Embassies of U.S. Attacked/ Belgians and Britons Also Targets of Mobs in Cairo, Nairobi and Prague
	30	Saigon Soldiers Quell Agitators in Funeral Clash/ Small Group Fails to Turn Riot Victim's Services Into Mass Demonstrations
Dec.	1	Rabbis March Here in Protest on Soviet

TABLE 1 (Continued)

Date	Headline
Dec. 4	796 Students Arrested As Police Break Up Sit-In at U. of Calif.
8	10 Dead, 400 Hurt in Sudan Rioting/ Hundreds Reported Jailed in African-Arab Strife
9	Karachi Women Defy Rally Ban; Student is Slain in New Rioting
16	500 Buddhists Fast in Saigon Protest
24	Thousands Flee Floods in West; 11 Killed
28	Pakistani Woman Killed in Rioting

A good way of classifying crowds cannot be decided in the absence of a good theory of crowds. The various attempts to group and classify collectivities often rely on organizing principles that are sometimes not made explicit, and have rarely been seen in relation to a clear theory of collective phenomena. It is obvious that, in the light of different views on "what constitutes the essence of a crowd," different groupings will emerge.

Moreover, no taxonomy seems fully adequate to the task of naming all crowd phenomena. Forms of collective protest, for example, are not immutably fixed but continually evolve and sprout new varieties. Sit-ins (January 24), stall-ins (April 21), and swim-ins (June 19) were tailored to meet the needs of a specific protest movement; types of protest indigenous to local cultures persist (April 10, December 16); and it is likely that new varieties as distinctive as the rally, boycott, and the audience will eventually appear.

Even a single assemblage may display a variety of crowd forms. Objectives may change in the same group over time: a crowd coming to greet a political leader may turn on the police (October 7); spectators at a sports event may set out to murder the referee and subsequently panic (May 25). Conditions of fluidity and transformation from one crowd type to another need to be explained. Gordon Allport (personal communication) has suggested that a crowd turns into a *mob* when the common emotion is intense anger, while it is transformed into a *panic* when the common emotion is intense fear. A detailed theory is needed that can spell out what kinds of crowd transformation are possible and what kinds are not possible; which changes in crowd form and mood are reversible and which cannot go back to the starting state. Smelser's theory (1963) goes further along these lines than any other.

A theoretical issue implicit in many of the headlines concerns the role of leadership in crowd activity. Often the leader attempts openly to recruit for his cause (March 23, November 1), but leadership may also be hidden. In the episode in Rwanda (March 6), violence was ascribed to organized agitators in an attempt to deny a popular basis for the riots. In many cases it is unclear what role leaders play. Does an anti-American throng in Peking (January 14) represent a spontaneous assemblage of persons and the unplanned expression of sentiment, or was it an organized meeting? If the latter is true, what functions is this type of protest seen to perform in the eyes of those who set it up? Similar questions may be raised in regard

to the rock-throwing mobs in Cairo, Nairobi, and Prague (November 27). Are mobs ever truly spontaneous or do they always reflect some degree of premeditated organization?

A sports event may be the occasion for a riot (May 25), as may a dance (March 16). But what is the essential difference between an event such as a rugby match and a riot? Both involve violent physical struggle, but the rugby match occurs in the context of stated rules agreed upon by persons on both sides. Still, one may ask whether there is a hidden set of rules underlying riots. Perhaps it is a latent rule of riot behavior that sticks and stones, but not automatic weapons, are used against adversaries, or that riots do not occur when a large proportion of the crowd consists of women and children. Is there a cultural model for mob activity? (Shellow and Roemer, 1966, state that an outbreak of motorcycle riots was inspired by a cinematic model, *The Wild Ones*, a film depicting a marauding gang of motorcycle hoodlums.)

Surely, there are implicit rules governing the relationship between protesters and those against whom the protests are directed. In accounts of sit-ins in the United States, where participants block buses and automobiles with their bodies (March 7), the method of protest is closely tied to the expected response. The vehicles never intentionally run the demonstrators over, and the protests succeed on that account. But the rules vary in different situations. A group of housewives forming a human chain along the Polish Frontier could hardly have prevented the Panzer divisions from rolling across the border. In contrast, Gandhi's movement of passive resistance was based on knowledge of Indian culture and a shrewd calculation of the British response; the British arrested the marchers, but did not slaughter them. The method of protest was a viable one, regulated by a set of rules governing both the protesters and the British administration (Bondurant, 1958).

Questions of social control are suggested in the *Times'* reports of January 13, February 27, and March 7. The imposition of controls frequently follows a collective episode and is designed to curtail its spread or apprehend and punish those who participate in it (December 4). Some types of control, however, are invoked as precautionary measures to *prevent* collective outbursts (April 1, November 26). The method of control also depends on the composition of the crowd: teenagers may compose one crowd (February 13), rabbis another (December 1), and women yet a third (December 9). What is the relationship between the composition of the crowd, the form of action it pursues, and the method of control used to combat it?

The human body, by virtue of its size, shape, and physical extension in space, comes to play a determining role in crowds. Bodies may serve as physical obstacles; in the sit-in on the Triborough Bridge (March 7), the barrier properties of the body served to block traffic. When a man is in the midst of a crowd, he finds that others obstruct vision, create noise, restrain his movements (July 17), and sometimes constitute a surrounding wall that is impenetrable (April 23). When we say that a man is "fighting his way through a crowd," we mean that the sheer act of locomotion in the crowd requires effort and even the aggressive handling of others. Canetti (1962, pp. 26f) has captured this aspect of the participant's experience:

[In a panic] the individual breaks away and wants to escape from it because the crowd, as a whole, is endangered. But because he is still stuck in it, he must attack it The more fiercely each man "fights for his life" the clearer it be-

comes he is fighting *against* all the others who hem him in. They stand there like chairs, balustrades, closed doors, but different from these in that they are alive and hostile.

A comprehensive theory of crowds must take into account, in a systematic rather than metaphoric fashion, the role played by the physical conditions created by dense aggregates of people.

The majority of crowd episodes reported in the *Times* were associated with a set of cultural, sociological, or economic causes that lie beyond the immediately gathered crowd. Widespread unemployment gave rise to the protest in Oran (January 8); food prices led to riots in India (September 28); political issues were at stake in the Vietnamese protests of Buddhists (November 26). Are the causes of crowd action generated within the crowd, or do they reside in the broader conditions of society? How far must we cast the net of causal explanation for an adequate understanding of a concrete crowd episode?

If we base our impressions solely on the headlines, it would appear that a study of crowd causation requires attention to both precipitating and long-term factors. The immediate motives of crowds are often the culmination of grievances built up over time. Thus, when Panamanians riot in response to a treaty renewal plan (January 11), when conservative Jews object to innovations in Israel (April 10), or when a neighborhood rally deplores slum housing in Harlem (May 31), a thorough study of causation requires familiarity with the historical context of each of these complaints. Moreover, almost all the crowd episodes reported in the *Times* arose out of a set of pertinent economic, cultural, and institutional conditions and can only be explained with reference to them. Religious institutions, for instance, are needed to explain the reception accorded the Pope (January 5), while student sprees (March 16, 29) cannot be explained without reference to the pressures of mass education, the practice of mid-semester holidays, and economic conditions that enable a large number of students to congregate in a distant holiday resort.

But not only do relevant causes have to be isolated and traced to their context; they must also be related to the concrete "here and now" crowd. For example, granted that many conditions in the United States in 1964 favored the outbreak of race riots, why did such riots occur primarily in the summer months (July 7, 13, 19, 20, 25, 30; August 4, 5, 13, 15, 17)? What is the role of unemployment, school vacations, heat and humidity, or earlier riots, in fixing the time and place of these racial disturbances? How do various causes of a crowd interact, and what type of theory best describes the interaction?

Violence, death, and extreme forms of behavior are frequently reported in connection with crowds (July 7, September 5), and the incidence and causes of such violence need to be examined. Does it occur more frequently in crowds than in other social settings? Is the extreme behavior an accidental consequence of a large number of people acting without organization or plan? Does the crowd change the individual, or does the individual ready for aggression seek the crowd (March 29)? These questions have concerned theorists since the time of Le Bon (1895) and have dominated the theoretical picture. Historically, the most persistent question in the study of collective behavior has been: "Why do the restraints that lead to conventional, decent behavior in the average man break down when he is in the crowd?"

Finally, the *Times* headlines give some indication of the ubiquity of collective episodes in social life. Such events are not rare occurrences remote from the ordinary life of the community. Rather they are commonplace, a fact that makes them susceptible to systematic study, and also points to their importance in the social sphere. They are not simply figments of the social psychologist's imagination.

ELEMENTARY FEATURES OF THE CROWD

Typically, the crowd has not been *what* has been studied, but *where* things have been studied. Yet the crowd ought to be the object of study, and not simply the locus where particular kinds of behavior are examined. In this section we shall discuss a number of macroscopic properties of the crowd, such as shape, internal structure, rates of growth and dispersion, and boundary conditions.

Any crowd can be seen as a group of points coming into aggregation, growing in size at specifiable rates, evolving new shapes, and possessing certain self-distributing dynamics, coalescing out of larger throngs in a specifiable manner, with boundaries that are sharp or diffuse, permeable or closed to points lying outside the boundary.

While a fully articulated theory linking the variables of macroscopic analysis has not yet been proposed, characterization of the crowd at this level may suggest important regularities. Moreover, this perspective lends itself to empirical inquiry. Spatial aspects of the crowd may be readily recorded with techniques of aerial photography, and time-lapse studies or motion picture films allow the temporal features to be recorded and carefully scrutinized (Millard, 1963). Such methods may make it possible to predict, for example, the eventual size of a crowd on the basis of initial rate of aggregation—a question of considerable theoretical and practical import.

SHAPE AND RUDIMENTARY STRUCTURE

Typical group configurations have often been noted in species of birds, schools of fish, and packs of baboons (Hall, 1966; Lorenz, 1966), but the shape of spontaneous human aggregations has eluded study. Partly, this is because observers generally view crowds from the same plane as the crowd, while the most advantageous perspective for configurational studies is from a position directly overhead. Pending the availability of systematic data, the observer of crowds is limited to a few rough generalizations about basic crowd structures and their functions. Discussion will begin with one variety of crowd structure, the ring.

The ring

If individuals are randomly distributed over a flat surface in the starting situation, a point of common interest in the same plane creates a crowd tending toward circularity. The circular arrangement is not accidental but serves an important function. It permits the most efficient arrangement of individuals around a point of common focus (see Fig. 2). For experimental purposes, an ideal ring can be created by dragging an object of interest from the ocean and onto a populated beach. A treasure chest will suffice; a circular ring will form around it.



Fig. 2. Crowds in ring form. The scene depicts crowds gathering around vendors in an open-air Moroccan marketplace. (Loomis Dean for Life, copyright © 1965 Time, Inc.)

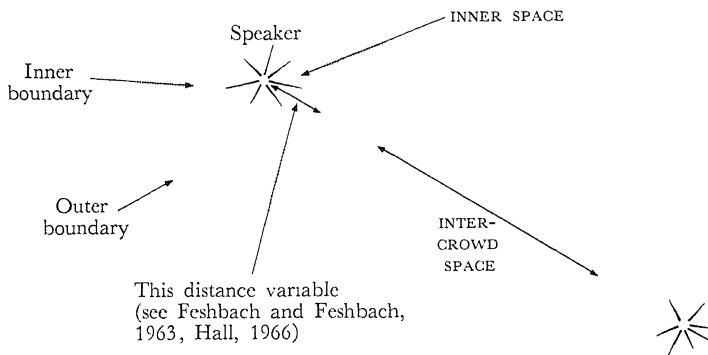


Fig. 3. *The structure of the ring.*

Nature abhors a square crowd. The crowd builds in the form of accretions to the initial circular core. Even when a ring grows to be many layers thick, the circular shape tends to prevail. Ecological factors, such as the presence of walls or barriers, may prevent the full completion of the ring, but frequently arc segments can be discerned. Whenever we see an assemblage with rectilinear properties, we may infer that it is not a spontaneous grouping, but reflects the imposition of an institutional form on the crowd.

Persons who arrive early tend to be at the center of the ring; those who arrive late tend to be at the fringe. However, there will also be movement of the more ardent or involved members toward the crowd's center, so that fractionation strata, analogous to the strata resulting from the separation of heavy and light particles in a centrifuge, occurs. *Milling* has traditionally been seen as a means of exchanging information (Blumer, 1946), but it also allows people to settle into their proper places in the crowd structure, into more central or peripheral positions. A hypothesis that emerges, therefore, is that those who are most intensely motivated to carry out the crowd's purposes will be disproportionately represented at the crowd's structural core.

The structure of the ring is illustrated in Fig. 3. Several features need to be mentioned. The inner area allows a spatial separation of onlookers and speakers. The larger the circumference of the inner boundary, the more individuals can observe the speaker unobstructed by heads and bodies of other members. The inner space also highlights the functional difference between the speaker and onlookers. The dimensions of the inner space are related to a number of variables, such as degree of attraction or repulsion to the speaker, his elevation, the size of the ring, and the pressure from those in the rear. Feshbach and Feshbach (1963) reported on the changes in the dimensions of a ring. They created fear in a group of boys seated in a circle by recounting ghost stories, and noted the effect of the induction (p. 499).

Although the diameter of the circle was about eleven feet at the beginning of the story-telling, by the time the last ghost story was completed, it had been spontaneously reduced to approximately three feet.

Boris Sidis (1895) proposed a rudimentary structure in the hostile mob, and described its organization in terms of a "sensory and prehensile nucleus" which is formed in the center of the crowd, but is forced to the front, and a "nucleolus contained with a nucleolus"—that is, a crowd hero surrounded by his most devoted followers. Sidis' cellular analogy does not help very much, but the underlying idea of a structure within the crowd ought not to be overlooked. Of contemporary writers, Canetti (1962) and Hall (1966) are most attentive to structural features of the crowd.

BOUNDARIES

A boundary defines the limit or extent of the crowd. The two major characteristics of boundaries are (1) permeability and (2) sharpness.

Permeability

Whether a crowd boundary is open or closed to new persons depends on both physical and ideological factors. Descriptively, we must distinguish between penetration of the boundary and accretion to it. Penetration specifies entry from points external to the crowd followed by movement toward the center. Accretion refers to the clustering of persons at the fringes. A densely packed ring surrounding a circus performer may not permit others to get close to the core but allows them to build around the outer fringe. Even accretion, however, may be rejected in the interest of preserving the privacy of an already gathered group. Crowds need not be fully open or closed, but may display selectivity along ideological lines. A proletarian lynch mob in formation is ordinarily open to whites, but violently rejects Negroes (Cantril, 1941).

Permeability works both ways. Once within a crowd, it may be impossible to pass through the outer boundary (see Canetti quotation on pp. 516–517). Stone-throwing crowds, described in the Old Testament, encircled their victims, creating an impenetrable surround. Celebrities are sometimes unable to extricate themselves from a thick ring of admirers.

Sharpness of boundary

The definition of crowd boundaries may be clearly demarcated or vague. Measurement is not always easy, particularly when the crowd has coalesced out of a larger throng which continues to function in unfocused form around the core. Polarization constitutes the best single measure of the crowd boundary in such cases; as one moves out from the center of the crowd in concentric rings, the proportion of people polarized toward the center may drop off; it is anybody's guess what polarization value defines the exact boundary of the crowd.

Crowd boundaries are also of interest because the junction of two crowds causes a set of distinctive phenomena. The clash of two hostile groups, such as political demonstrators and police, is largely a boundary confrontation. Most of what is especially dramatic occurs at the interface; it is here that blows are cast and clubs are

+	+							-	-
+	+	+	+					-	-
	+	+	+					-	-
+	+	+	+					-	-
	+	+	+					-	-
+	+	+	+					-	-
+	+	+						-	-
+								-	-

Phase 1
 $P=0$

		+	+	+	-	-	-		
	+	+		+	+	-	-	-	
		+	+	+	+	-	-	-	
	+	+	+	+	+	-	-	-	
		+	+	+	+	-	-	-	
	+	+	+	+	+	-	-	-	
	+	+	+	+	+	-	-	-	
	+	+	+	+	+	-	-	-	

Phase 2
 $P=0.11$

				+	-	-	+	+	
	-	-	-	+	-	+	+	+	
	+	+	+	-	+	-	+	-	
+	+	+	+	-	+	-	+	-	
	-	+	+	-	+	-	+	+	
				+	-	+	-	-	
				+	-	+	-	-	
				+	-	+	-	-	

Phase 3
 $P=0.58$

$$P = \frac{\text{number of squares containing mixed crowd elements}}{\text{number of squares containing any crowd elements}}$$

Fig. 4. *The interpenetration of two crowds.*

whipped out on the front rank of demonstrators. Frequently, a crowd will disperse after the front phalanxes of both sides have had an initial encounter. But when the boundaries blend into each other, one knows that a form of free interaction is developing and the crisis is deepening. For purposes of measurement, the degree of interpenetration of the two sides can be specified readily in the statistical terms of mixed and unmixed runs. Or one may apply a grid over photographs taken at different phases of a riot, and determine how many squares are mixed, and how many contain unmixed elements, as illustrated in Fig. 4.

Solvency is the degree to which one collectivity blends into another when the two of them meet and dissolve their identifications with the original groupings. A parade is usually insolvent, even as it passes through onlookers; but it may be so inundated and interspersed with onlookers that its form disintegrates. Boundary maintenance is an important problem in organized collectivities. As an exception, the anti-nuclear protest march from Aldermaston (Lang, 1960) typically invited onlookers to join the group. Here a fluid boundary between marchers and onlookers was encouraged.

Crowd boundaries often change by accretion independently of the intentions of those already in the crowd, and a participant's position relative to the boundary can

consequently be altered. At the Boston Civil Rights Rally of March 14, 1965, the first author noted:

I had been standing on the perimeter of the crowd, but by 2:50 P.M., without doing anything, I found myself no longer on the fringe. A great mass of people had formed behind me, and I was now in a relatively central part of the crowd. Somewhat the same feeling as waiting at the very end of the line at a movie theatre, and then with great surprise noticing how many people had formed behind me. By doing nothing, my position shifted in a changing structure.

The observation is representative of a general property of crowds. There is a separation of intention and consequence. A man becomes immersed in a situation whose properties are continually changing. He decides to stand on the fringe, yet finds himself at the core; he wishes to remain stationary, but the dense flow of bodies carries him forward. The choices made by a plurality of others in interstimulation create altered conditions for him that are independent of his intentions; in turn, his response to the conditions creates constraints and pressures for others.

INTERNAL SUBSTRUCTURES

An assemblage that appears to be undifferentiated may on closer examination possess internal boundaries dividing it into several subgroups. *Lamination* effects are common in crowd formations. For example, outside the Cow Palace in San Francisco during the 1964 nominating convention of the Republican Party, a parade of CORE demonstrators protested the candidacy of Senator Barry Goldwater, but they were surrounded by a pro-Goldwater crowd that attempted to nullify the effect of the CORE demonstration (White, 1965). Laminated crowds composed of antagonistic subgroups constitute ideal predisposing conditions for riots.

In totalitarian countries, the managed mass demonstration has become a common occurrence (Methvin, 1961) and depends for its stability on the creation of invisible but carefully planned internal substructures. Workers parade in the street, seemingly spontaneous, enthusiastic, and unrelated to each other. But each parade participant is embedded in a group of persons who know him, frequently his fellow factory workers. Thus a lack of enthusiasm, or a failure to show the proper amount of spontaneous and uninhibited participation, is discouraged.

Even in the truly spontaneous crowd, friendship ties, family ties, and role relationships constitute substructures and govern the participants to a greater degree than is ordinarily supposed. Most crowds cannot be thought of as an aggregate of isolated points, since a fair proportion of the participants are likely to have specifiable kinship or friendship ties to one or more other participants in the assemblage.

Moreover, a far greater diversity of activity goes on in what appears to be a homogeneously acting crowd than is generally supposed. To cite an example observed by the author: At the height of the Boston Civil Rights rally of March 14, 1965, on first glance the entire audience seemed rapt in attention as a speaker described the brutal treatment he had received at the hands of the Mississippi police. More careful scrutiny of the crowd, however, revealed that highly varied activities were in progress. A good proportion of the audience was attending to the speaker. But others were engaged in private conversations. A mother was tying the shoelace of her child. Even

business relationships were in evidence: a photographer with a Polaroid camera was circulating in the crowd, photographing participants; he then had no difficulty initiating a seller-client relationship with those whom he had photographed. Recent theories by Turner and Killian (1957) and Lang and Lang (1961) stress differential participation as major features of crowd activity.

POLARIZATION

Polarization provides one index of the "mental unity" of a crowd. Attention, after all, is one aspect of such unity: if the members of a group all face one object, such as a speaker, the group is highly polarized; if they face in many different directions, the degree of polarization is low. A theater audience united by interest in a play will show nearly complete polarization, but if a substantial proportion of the spectators are looking away from the stage, things are not going well for the players.

For most groups, polarization is related to important aspects of structure and function. Polarization is likely to be higher near the center of a crowd than at the fringes. In certain situations, polarization delineates the borders of a crowd. Consider a fairground on a busy day. Many of the observers at any time will be in random motion among exhibits, but a subgroup will be polarized around each attraction. When the borders of the subgroups are not sharp, a quantitative measure of polarization can be used to determine where the splinter groups end and the freely moving mass begins. A crowd, in short, is distinguished from a mere aggregate by some commonality of interest or purpose. As a rough measure of such commonality, polarization is used to specify the borders of crowds and to delineate subgroups within a large assemblage.

Similarly, polarization is related to the breakup of crowds. Diminishing polarization frequently precedes spontaneous breakup of the group, as individuals lose interest and prepare to disengage. Changes in polarization over time reveal much about the workings of a crowd. Sequential records of polarization in a crowd watching political candidates could yield important insights about the effectiveness of speakers. For example, in the 1960 Presidential election, did Kennedy or Nixon characteristically create crowds of higher polarization?

Though writers have discussed polarization (Brown, 1954; Woolbert, 1916), little has been done to explore its empirical applications. As an example of the kind of work that could be undertaken, consider the accompanying photograph of Governor Nelson Rockefeller in the midst of a crowd at Berkeley (Fig. 5). An arrow is assigned to each member of the crowd, showing the direction in which his eyes are focused. A radial grid is fitted over the crowd, with Rockefeller in a circle at the center. The resulting diagram (Fig. 6) provides a clearer overall picture of polarization than does the photograph itself.

Each individual arrow is extrapolated to test whether it intersects the Rockefeller circle. If an arrow does intersect the circle, the individual is polarized and is assigned a value of 1. If not, he is unpolarized and assigned a value of 0. Polarization for the entire crowd can be represented by the fraction:

$$\frac{\text{sum of polarization values for crowd}}{\text{size of crowd}} \cdot \checkmark$$



Fig. 5. Governor Nelson Rockefeller in the midst of a crowd at Berkeley. (Courtesy of Wide World Photos.)

The crowd in the photograph consists of 266 people, of whom 148 are oriented toward Rockefeller. Thus the polarization quotient is $148/266$, or about .56. The quotient may appear low for this crowd, which on first impression appears to be paying attention to the Governor. Indeed, when persons are asked to indicate the proportion of the crowd looking at Governor Rockefeller, they usually overestimate it. This finding supports Turner's (1964) theory that the sentiments and behavior appropriate to the situation tend to be imputed by observers to all the crowd members.

Note. The line of an individual's vision may not coincide perfectly with the radial, and yet he may actually be looking at the focus of the group. This is another way of saying that the focus is not a point but a physical object of finite size. Allowance for deviation due to this fact, as well as deviation due to small random errors in judging the direction of vision of crowd members, can be made by representing the focus of the crowd as a circle of finite radius. As suggested above, polarization in the Rockefeller picture was determined on the basis of the circle diagrams in Fig. 3. Clearly there is an arbitrary element in deciding the appropriate radius for the focus circle.

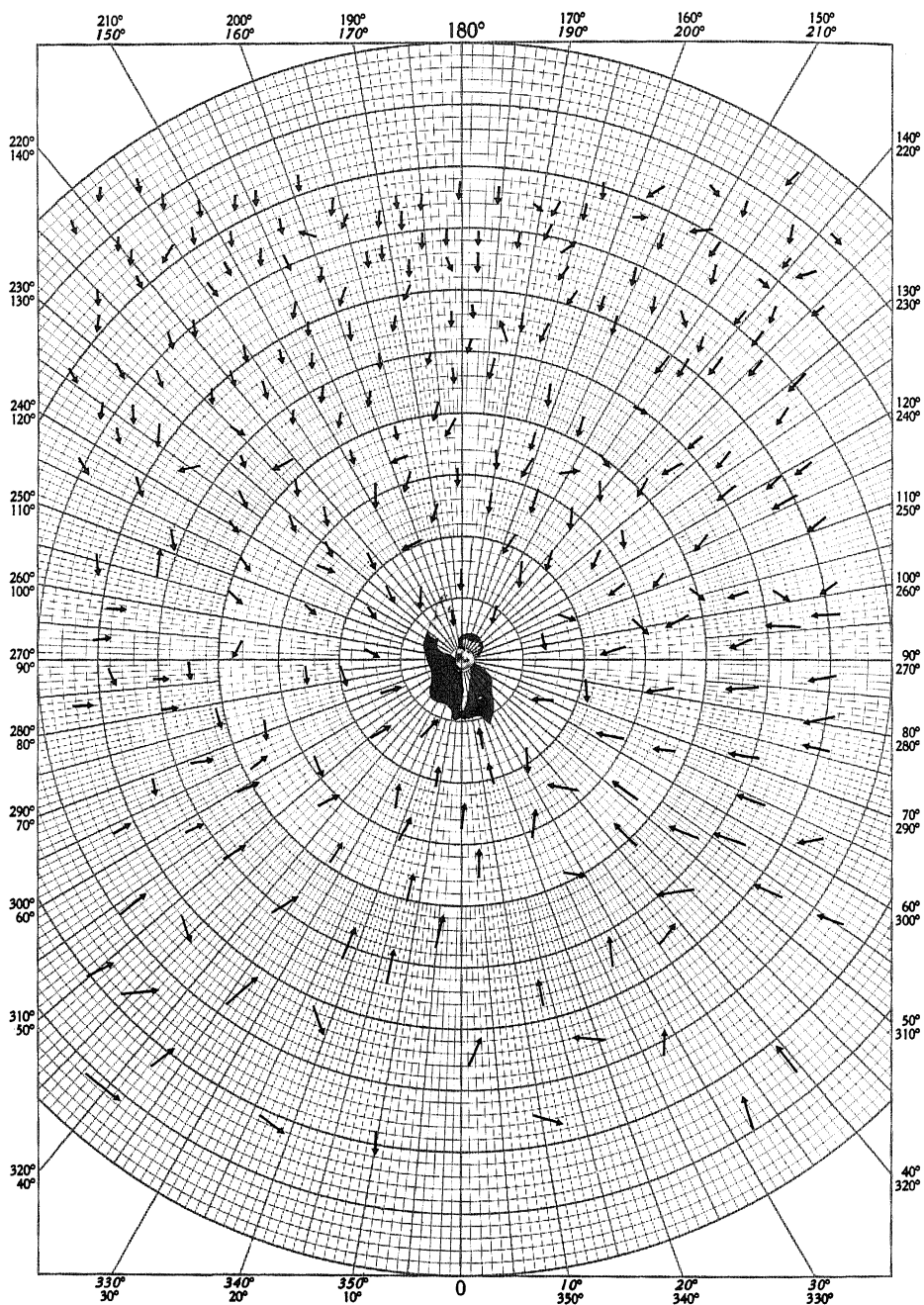
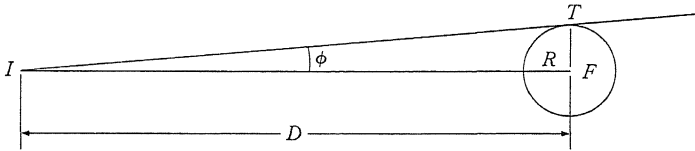


Fig. 6. Diagram showing polarization of the crowd depicted in Fig. 5.

Once that radius is determined, however, calculating the appropriate tolerance at any point on the polarization diagram is a simple geometric process (see figure below): Let angle ϕ represent the greatest deviation from the radial which will still allow an individual (I) to be called polarized. Clearly, this angle is generated when his line of sight is just tangent to the focus circle of radius R . Let D be the distance of the individual from the center of the focus circle. A ray tangent to a circle is perpendicular to a radius drawn to the point of tangency (T). Thus ITF is a right triangle, and ϕ is the angle whose sine is given by the radius (R) of the circle divided by the distance (D) from the individual to the center of the circle. That is,

$$\phi = \sin^{-1}(R/D).$$

Whether or not an individual is polarized can then be determined by measuring the deviation from the radial of his line of sight, and comparing it to the allowed tolerance.



ECOLOGY: DEPENDENCE ON PHYSICAL-ENVIRONMENTAL CONDITIONS

There are innumerable points at which the shape of the environment radically affects crowd functioning. The building of wide boulevards in Paris was deliberately planned by Hausman to prevent insurgent crowds from forming barricades across narrow city streets (Pinkney, 1958). Panic depends on a special set of physical conditions, in which there is an aggregate enclosed in a space that has limited exit possibilities such that those who rush for them first can escape, while those who are behind cannot. When an aversive stimulus, such as a fire, occurs in a totally enclosed area where there is no possibility of escape, panic does not develop (Brown, 1965). Also, when the escape routes are not limited but fully open, panic rarely develops (Schultz, 1964).

A typical instance of the dependence of crowd behavior on the exact physical details of the environment is illustrated in the "Brattle Theatre breakdown of norms," observed by the first author:

When patrons arrived at the Brattle Theatre in Cambridge, they purchased tickets and then formed a line along wall A [see Fig. 7(a)]. When the line became sufficiently long, it doubled back over wall B.

Those who had bought their tickets first had priority of entrance according to a well-established understanding among patrons. When the doors to the auditorium were opened the patrons were to proceed in order of arrival and select their seats. However, the corridor in which the doubled over line was formed was an extremely narrow one, so that in order for person X to proceed along the prescribed path, he frequently jostled and bumped into others proceeding in the opposite direction. The internal friction became very great, and eventually

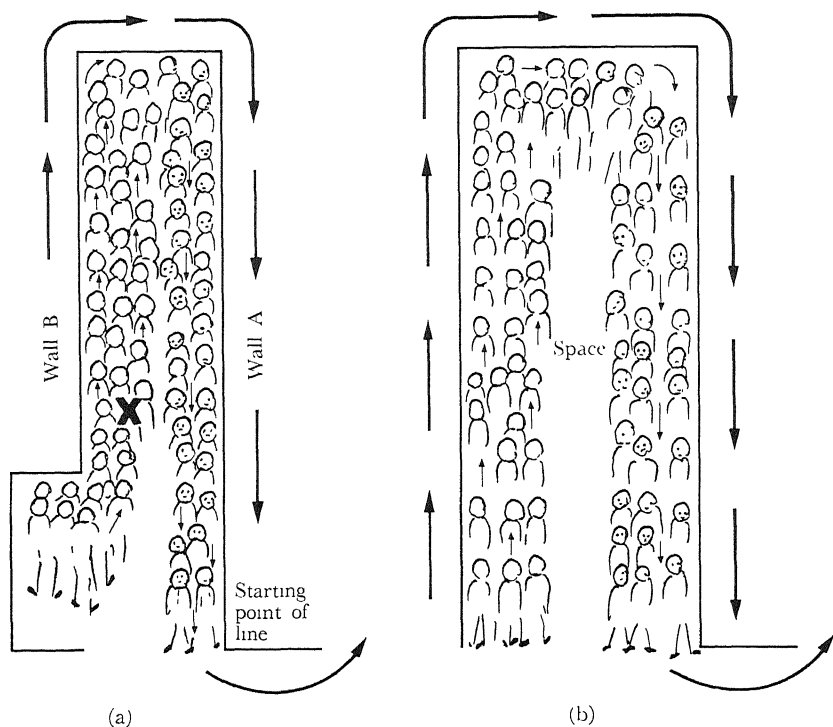


Fig. 7. *The Brattle Theatre breakdown of norms.*

the people along wall B would turn around, in violation of the norm. And those at midpoint would become the last to enter. This happened repeatedly. A solution to this problem was found by widening the corridor so as to avoid internal friction [see Fig. 7(b)]. This resulted in the orderly and correct sequence of entry into the theatre.

Density

The number of people within a specified space defines the density of the crowd. Jacobs (1967) has computed the density for several crowds assembled to hear speakers in Sproul Plaza on the Berkeley campus. Working with aerial photographs, he tallied the number of persons present, and divided this number into the area under observation. The highest density he observed was four square feet per person during a religious gathering (when the absence of a loudspeaker forced listeners to get close to the speaker to hear what he was saying). With loudspeakers present, densities were lower. When Stokeley Carmichael, a militant Negro leader, spoke, Jacobs calculated a crowd density of 5.7 square feet per person; counts of 6.5 and 8.5 square feet per person were observed on other occasions. Jacobs points out that, by applying this formula, official estimates of crowd attendance can often be shown to be grossly exaggerated.

The densest crowds commonly found in day-to-day life are those in the subways of Tokyo. Pushers are employed to pack as many bodies as possible into subway cars. High density, as in the case of the Brattle Theatre, invariably creates problems of internal friction. In Tokyo, slippery coats are sold to subway riders to facilitate their movement through the tightly packed mass (Clark, 1965).

Hall (1966) asserts that there is a psychological sense of crowding that cannot be equated with the simple density of people per unit of space. How a person responds to jostling and shoving will depend on how he feels about being touched by strangers. Further, there exist cultural differences in the tolerance of dense throngs: "The Japanese and Arabs have much higher tolerance for crowding in public spaces and in conveyances than do Americans and Northern Europeans" (Hall, 1966, p. 58).

The work of Calhoun (1962) on Norway rats, Christian (1960) on Sika deer, and Parkes and Bruce (1961) on a variety of animals shows that mammalian populations are controlled by physiological mechanisms that respond to population density, that extreme social disorganization may result from crowding, and that biochemical malfunction and even death occur when animal densities rise above a critical point. The implications for human crowding have not yet been thoroughly investigated.

Rationalizing the crowd

Many societal devices have been adopted to regulate the relationship of crowds to physical constraints (Cox and Smith, 1961). Some stores handling a large number of customers at once prevent a mob atmosphere by assigning numbers to patrons and serving them according to numerical sequence. The quitting times of employees in large office buildings are staggered to prevent the formation of throngs at the elevator. Cultural norms, such as the dictum "women and children first," prescribe a sequence for leaving a situation of danger. In queuing up for buses, instead of creating a squeeze at the bus door, with its possibility of injury, those waiting assemble themselves in a line, permitting rational entry according to priority. The rationalization of crowd behavior is likely to increase in social life as population densities rise.

The importance of fitting crowd movement to the proper physical environment cannot be exaggerated; designers of theaters and other arenas are now giving serious consideration to the proper flow patterns for efficient evacuation of their structures. Social psychologists, who introduced the idea of crowd phenomena, ought to make a more substantial contribution to this technical problem.

The successful application of computer simulation to fluid dynamics suggests that crowd flow can be simulated, and experiments may be performed without actually herding an army of subjects down laboratory corridors (Harlow and Froom, 1965). Students of crowd phenomena can take advantage of the natural flow of crowds out of stadiums and other areas of high crowd density, and with the aid of photographic and tracer techniques, plot the crowd flow directly.

THE CROWD IN MOTION

The rate at which people walk is ordinarily figured by traffic engineers at four feet per second (Bruce, 1965), with speeds generally decreasing as the density of the crowd rises. The relationship between walking speeds, crowd densities, and time of day is shown in Fig. 8.

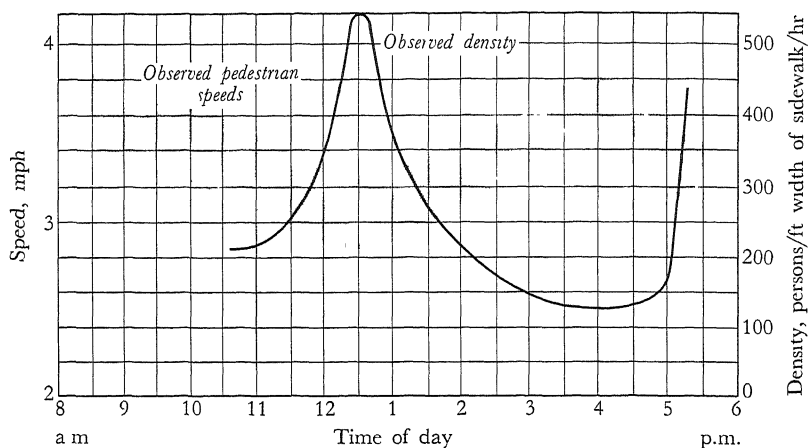


Fig. 8. Relationship between pedestrian walking speeds and density. (From Bruce, 1965.)

Acceleration

The term synchronized acceleration refers to a situation in which all crowd members begin to move at the same time. This happens in an army unit when the command "forward march" is given. It may also occur when a common stimulus to start, such as a changing pedestrian light, is perceived by all members. But it is relatively rare. Most often the crowd transforms itself from a stationary to moving state by staggered motion. A person waits for the man in front of him to make his move before he starts.

The inefficiency of staggered motion relative to synchronized motion is clear, for in staggered motion the time required to move the crowd is a function of the time it takes the first unit to respond to a stimulus plus the time it takes for the second unit to respond to the $n-1$ unit. Thus:

$$\begin{aligned} T_d &= f(r) && \text{for synchronized motion,} \\ T_d &= f(r_1 + r_{2,1} + r_{3,2} + \cdots + r_{n,n-1}) && \text{for staggered motion,} \end{aligned}$$

where T stands for the time required for the crowd to move a given distance d , and r is the time required to respond to the stimulus.

If all members of the crowd are moving in the same direction, crushes occur when the n th unit proceeds to move forward before $n-1$ has accelerated sufficiently. More generally, the number of collisions between persons in a crowd is a complex function whose chief variables are the density of the crowd, the rates of acceleration, and the number of directions pursued by the participants.

Man-vehicle aggregates

The problem becomes more critical when normal pedestrian rates are augmented by vehicles. A dense aggregate of automobiles driven on a city street, or jammed up at a junction, constitutes a form of contemporary crowd. It is easy to forget, on seeing

a traffic snarl, that we are dealing first and foremost with the behavior of human beings, embedded (to be sure) in vehicles, but still responding in terms of crowd psychology. Ritter (1964), a student of urban design, has concerned himself with one aspect of this problem. He notes (p. 34):

Encased in steel armor almost every driver changes from his pedestrian self into a far more aggressive personality . . . once tied to the car, people themselves become less sociable, cooperative, rational, considerate and kind.

Many of the unsavory characteristics Le Bon (1895) attributed to street crowds, urban designers now attribute to crowds of drivers. The shock often felt when six or seven people are trampled to death in a theater crush is rarely extended to consideration of highway deaths. If people could walk as rapidly as they drive, the formal identity of the problems would be more generally seen. Crowds of cars have been subjected to theoretical analysis, and some of the ideas developed in this realm are equally relevant to the description of crowds of people.

Distinctive forms of crowd activity have developed in close connection with vehicles in modern times. Motorcycle riots are common (Shellow and Roemer, 1966). The presence of the cycle enhances the participant's feeling that he can speedily leave the scene of the riot, and thus escape legal action—a contemporary extension of the sense of anonymity.

Note Theorists view traffic as a moving stream with properties of flow, density, and waves (Gazis, 1967). A wave is a tendency of cars in a stream of traffic to bunch together at certain points and then spread out at other points.

Edie and Foote (Edie *et al.*, 1963) demonstrated that waves of congestion could be reduced by separation of cars into groups called platoons. Platoons improve total flow and, since there is less packing together, reduce the number of stops and starts.

Social influence is clearly demonstrable. Herman and Rothery (as reported in Schmeck, 1966) have shown that a fast pacing car will hasten the movement of traffic as surrounding drivers try to maintain the same speed as the lead car. When one car follows another, these investigators have determined, the follower is most concerned with keeping at the same speed as the lead car, but is less concerned with maintaining a uniform distance.

CROWD SIZE

Growth

In a recent television program, the producer staged an automobile accident in the streets of Rome. With the permission of local authorities, two cars were crashed against each other. Though the streets appeared relatively empty, a crowd began to form around the scene of the accident. It grew to a certain extent, perhaps ending up with 100 onlookers arranged in a circle around the cars. The crowd did not grow in unlimited fashion; rather, upon attaining this size, it ceased to grow further. The ultimate size to which an accident crowd will grow is limited by population density in the immediately surrounding area and by other factors, such as the time of day and the diminished visibility which the initial onlookers cause. These features of crowd formation need to be studied further, for though a good deal has been

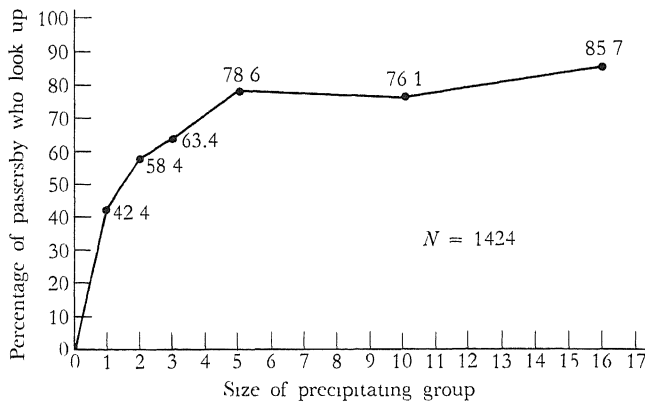


Fig. 9. Percentage of passersby who look up as a function of the size of the precipitating group.

written on the effects produced by crowds once they exist, little has been said about the processes of crowd formation. Canetti (1962) speaks of “crowd crystals” as those initial formations of people which precipitate the growth of larger crowds. Smelser (1963) discusses the general conditions of society that spawn crowd activity.

A field experiment carried out by the first author and his students examined the role of precipitating groups of varying numbers in crowd formation. Precipitating groups made up of 1, 2, 3, 5, 10, and 15 were, in random sequence, placed on a New York City street with heavy pedestrian flow. Members of the group performed a clearly observable action, looking up at the window of a skyscraper, and holding the pose for a period of one minute. Each condition was replicated five times. The investigators photographed the scene with motion picture apparatus, then, by analysis of the film, calculated the proportion of passersby who imitated the action. The results are shown in Fig. 9. The proportion of passersby who imitate the “looking up” response increases with precipitating groups of 1 to 5 persons, then levels off with groups of 5, 10, and 15. The attracting power of larger crowds is shown by an additional analysis. Whereas 4.05 percent of the passersby stopped to stand alongside a single person who looked up, 39.98 percent of the passersby stood alongside the precipitating group of 15.

An additional empirical observation on the changing size of crowds is provided by Christopher Millard’s study (1963) of the Piazza del Palio. Keeping a minute-by-minute survey of people entering and leaving, he was able to generate a graph showing the number of persons present throughout the day, as shown in Fig. 10. Using photographic aids and extensive notes, Millard also recorded 1050 incidents that occurred during the period of observation—a type of observational technique that social psychologists could well adapt to the study of crowds, and which in limited form has been attempted by Turner (1964).

The distillation effect

Declining crowd size may have important consequences for the composition of the crowd and consequently its disposition for action. At its peak the Boston Civil Rights

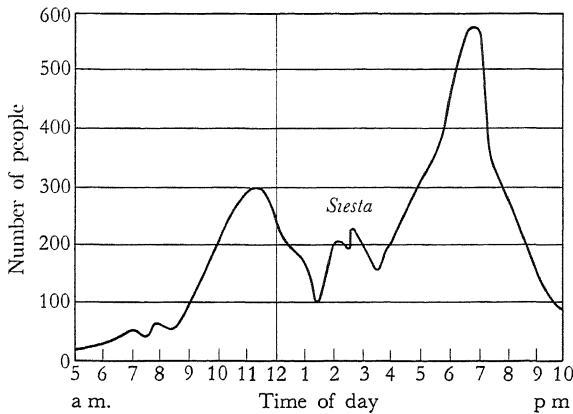


Fig. 10. Changing size of crowds in the Piazza del Palio (From Mullard, 1963, as reproduced in Rutter, 1964.)

Rally of March 14, 1965 contained several thousand participants. By 4:05 p.m. (as observed by the author), as a result of departures of those less committed to the rally (partly as a function of boredom and the increasing coldness), only a few hundred of the more ardent and dedicated members were left at the rally. Since stragglers, idle bystanders, and those merely curious had left, the rally now consisted of a dense concentration of dedicated supporters of civil rights. Under circumstances in which extraneous or poorly committed persons are selectively removed from the mass, diminishing crowd size leads to a purer concentration of ardent supporters and a heightened capacity for action. A crowd has a structure viewed against the temporal dimension. To learn who are the most dedicated members of the crowd, one can study the total duration of participation in a crowd and also examine who is the last to leave.

Estimating crowd size

The inadequacy of current techniques for estimating crowd size is made clear by an examination of the conflicting reports following crowd episodes. Police reports are the most common source of estimates, yet Jacobs (1967) has pointed out that police reports "are often double, or triple, and sometimes as much as twenty times the actual number." Estimates of the crowds assembled in St. Peter's Square in Rome, for example, are often as high as one and one-half million. Yet measurements show that the three big areas in front of the basilica which together constitute the square of St. Peter would hold not more than 240,000 persons at two square feet per standee.

Jacobs has presented a formula for estimating crowd sizes that can be carried out by observers on the scene. It consists of adding the length and width of the area occupied by a crowd and multiplying by a density figure, namely, 7 for a loosely composed crowd and 10 for a more compact crowd. He argues that the formula, easily applied, produces an estimate of crowd size accurate to within 20 percent of the size as determined by actual headcount of photographs taken of the crowd. Obviously, Jacobs' formula is affected by the shape of the crowd, and could not be applied

to an aggregate that is stretched out in a form approaching a line. Multiplying length by width, and dividing the product by a density factor, is more accurate.

A complication is introduced when the crowd does not consist of a stable population, but is composed of continually changing personnel, that is, when there are persons leaving and entering the crowd. Two estimates then become possible: an estimate of the maximum size of the crowd at any one point, and an estimate of the total number of persons who participated in the crowd during the course of its existence. It ought to be possible to sample crowd turnover and to use the sample as the basis of a crowd size estimate. But turnover rates may vary as a function of the location in the structure of the crowd where measurements are made; thus it becomes important to be able to adequately sample representative crowd locations. Methods of estimation must be checked against actual headcounts, a task that is arduous but necessary for establishing the adequacy of any sampling procedure.

The significance of numbers

The theoretical significance of numbers for the phenomena of collective behavior is still subject to dispute. Brown (1965), for example, believes that the essence of panic can be captured with only two people, so long as there is operative in the situation a payoff matrix comparable to that in the prisoner's dilemma game.

Yet surely certain crowd phenomena depend for their expression on large numbers. The *surging* of a crowd, for instance, cannot materialize with only a dozen people. At the other extreme, there is clearly a point of superfluity. In the 1963 march on Washington it was estimated that more than 100,000 people were present (Waskow, 1966). Would new phenomena arise after the first 10,000, 30,000, or 50,000? At what size do all the essential features of the large crowd appear? It may be surprisingly small. In Asch's famous laboratory study of group pressure, for example, it was found that groups of three to four confederates produced the maximum group pressure. Increasing the size of the majority even to 15 did not generate any new phenomena or increase the pressure of the group. What is the asymptotic number in crowds?

Argyle (1959) has shown in his examination of revival meetings that the proportion of persons who indicate conversion (by stepping up to the rostrum toward the end of the meeting) increases as the overall size of the audience increases. This could be due to the increased pressure on the potential converts. Or it is possible that the larger audiences have somewhat different compositions than smaller ones, with a higher proportion of people on the threshold of conversion.

Simmel (writing in 1908) more than any other social investigator believed in the importance of *absolute* numbers in determining the quality of social and political events (1964, p. 98):

... it is easier for an army of 100,000 to keep a population of ten million under control than it is for a hundred soldiers to hold a city of 100,000 in check, or for one soldier, a village of a hundred. The strange thing is that the *absolute* numbers of the total group . . . remarkably determine the relations within the group—in spite of the fact that their numerical relations remain the same.

Penrose (1952) has shown that, even in a democracy, a relatively small number of opinionated individuals, by consistently expressing their views by ballot, can come to

control disproportionately large populations in which one finds a random distribution of opinions.

A related question, as it concerns crowd activity, is this: What proportion of a crowd must pursue a given direction of activity before the behavior spreads and envelops the crowd as a whole? Rashevsky (1951) tried to deal with this question mathematically (see pp. 563–565). Motorcycle riots are traditionally ascribed to one percent who serve as catalysts and precipitate riots. Shellow and Roemer (1966) reported that “the rowdies have proudly accepted ‘one percent’ as an honorific epithet, had often emblazoned it on their costume as a badge of commitment.”

The very mass of an assemblage can sometimes produce a consequence quite independently of intention. If three people stand on a bridge and simultaneously stomp their feet, nothing happens. If three thousand people perform this action, the bridge may collapse, an effect brought about solely by the increased mass or size of the assemblage. A similar pattern can be ascribed to a good deal of so-called irrational crowd behavior. The sheer number of bodies may cause bottlenecks in narrow corridors, while the pressure exerted by those behind, the accumulated pressure of many bodies pressing on each other, exacerbates the situation. There is thus a separation of consequence from intention owing to the fact of large numbers.

Size and anonymity

One of the factors presumed to emerge in crowds of sufficiently large size is *anonymity*. Under the cloak of anonymity, according to Le Bon and F. H. Allport, many anti-social impulses are released. The general argument for anonymity is that a crowd member acts in unusual fashion because, by the size and nature of the group, he cannot be singled out and held responsible for his actions. This argument assumes the existence in the individual of a set of antisocial tendencies that are checked only by public opinion or fear of legal or social reprisal.

Turner (1964), in contrast, feels it is the fact that a man *can* be identified by other crowd participants that brings a person into line with their activities. Perhaps, then, one must ask: anonymity with respect to whom? Conceivably, the most effective release of errant impulses occurs when a man can be identified by those crowd participants acting in a deviant manner, but remains anonymous with regard to persons outside the crowd boundary, such as agents of law enforcement.

The police, of course, are most anxious to pierce the protective veil of anonymity that makes reliable identification of rioters so difficult. Technical aids, such as photographic evidence, have proved to be of some use. In the Harlem riot of 1964, police sprayed a fluorescent powder over the participants. The powder was ordinarily invisible, but under proper illumination it could be detected on those who had been in the vicinity of the riot. Such persons could then be prosecuted under existing riot laws.

In his chapter “Anonymity of the Flock,” Konrad Lorenz (1966) points out that there is more to anonymity than merely not being recognized. A further protective consequence of being embedded in large numbers is the difficulty a predator will have in apprehending any specific individual (p. 142):

Just try, yourself, to catch a single specimen from out of a cage full of birds. Even if you do not want a particular individual but intend to empty the whole cage, you will be astonished to find how hard you have to concentrate on a spe-

cific bird in order to catch one at all. You will also notice how incredibly difficult it is to concentrate on a certain bird and not allow yourself to be diverted by an apparently easier target. The bird that seems easier to catch is almost never caught, because you have not been following its movements in the immediately preceding seconds and therefore cannot anticipate its next movement.

THE COMPOSITION OF CROWDS

What are the characteristics of the people who make up crowds? When the populace ran through the streets of Paris and stormed the Bastille, who exactly were they? Were they bakers, bums, women, children, criminals, petty bourgeois? For a long time, surprisingly few exact answers could be given to this question. The typical view expressed by Taine and Le Bon was that revolutionary crowds were composed of criminal elements, riffraff, vagrants, or social misfits. Recent historical investigations by such empirically oriented investigators as Soboul (1964), Rudé (1959, 1964), and Tilly (Tilly and Rule, 1964) have brought into question this traditional view. Thus Rudé reports that, although Paris was flooded with unemployed agricultural workers in 1789, they played only a minor role in the tumultuous disturbances that beset the capital that year: "Among 68 persons arrested, and killed in the Reveillon riots in the Faubourg St. Antoine at the end of April, only three were without fixed abode and only three had served previous terms of imprisonment . . ." (p. 200). Of the 662 persons reported to have been killed in storming the Bastille, all had regular places of residence and had settled occupations. In addition to social class, information on age, literacy, religion, and geographical origin of important historical crowds is now being subjected to the scrutiny of investigators.

In more recent times, also, prison records have served as a useful source of information on those involved in rioting, at least those who were apprehended. In a study of the rioters and looters committed to prison for their participation in the famous Detroit riot of 1943, Akers and Fox (1944) noted the following characteristics of 97 Negroes and eight white men sent to prison. The rioters were disproportionately from states south of the Mason-Dixon line (compared to a nonrioting control group). They were older than nonrioters, less intelligent, and had less education than the control group. They were mostly unskilled workers and many (74 percent) had previously been in conflict with law enforcement agencies.

Wada and Davies (1957) studied a sample of Japanese-Americans who had rioted while in an American internment camp in 1942. Compared to a control group of nonrioters, the rioters differed mainly in their marginality between the two cultures of America and Japan; they also had relative freedom from family ties, and had little economic stake in American society. The authors concluded that rebellion is the work of a minority whose individual circumstances free them to react against the intolerable.

Glenn Lyonns (1965) obtained demographic data on students who participated in the police car demonstration in the 1964 Berkeley uprising. Demonstrators tended to be more politically liberal than the student body as a whole, and tended to reside under conditions of less restrictive housing (apartments rather than dormitories). Again, forms of marginality and distance from conventional living appear to characterize the demonstrators.

Changing composition

What appears to be a continually identifiable crowd frequently experiences change in personnel, as new and different elements move into the crowd and others withdraw. The infusion of a new social element into an ongoing rally or demonstration can serve as the mechanism for changing the activity and direction of the crowd. Craik (1837) reported that criminals frequently infused the crowds of revolutionary France, and gatherings that began with high revolutionary ideals were thus transformed into thieving, destructive mobs. The ruffian element of a community may be drawn into a riotous condition, taking advantage of the confusion to turn the direction of the crowd into looting.

The composition of crowds is functionally related to the actions of crowds, and the precise makeup of a crowd may play a very important role in determining the form of collective behavior that arises. Probably, combative riots will not occur with an assemblage containing a high proportion of women and children, because their presence would tend to dampen the movement toward violence. The composition of the crowd may also determine the response to it. Some clergymen displayed themselves prominently in the civil rights demonstrations of the 1960's in the hope that their conspicuous presence as part of the demonstrators would serve to curtail violent action by antagonistic onlookers. Crowds composed largely of women played an important part in revolutionary France in the eighteenth century, as well as in the Hungarian revolt of 1956. In the latter case it was felt that military forces would be less likely to take action against the women's crowd than against a crowd composed of men.

The composition of any crowd may be ordered in terms of the differential readiness of members to deviate from conventional norms of society. Brown (1954, pp. 846-847) has spelled out the various categories of persons who compose a mob, in terms of their readiness to violate conventional behavior:

1. There may be lawless individuals whose brutal behavior is not completely discontinuous with their private lives.
2. There may be others who readily succumb to the hypnotic powers of father surrogates . . . not ordinary criminals but simply very susceptible to a certain kind of leadership.
3. With the two impulsive groups above to trigger mob action the *loss of responsibility through anonymity* will bring in the *cautious*. There will be many who are strongly predisposed to criminal action and are only restrained by a fear of punishment.
4. . . . there will be those who cannot act until a full-fledged mob is in existence. When large enough numbers can be recruited at the lower thresholds to create an *impression of universality* or to permit the mass to supplant the superego, the *yielders* will become involved.
5. Then there are those *supportive* individuals who cannot be stampeded into action but who do not actively oppose the mob. They draw the line at active participation but are not averse to enjoying the show or even shouting encouragement
6. Finally there are the *resistant*, whose values are opposed to mob action and who are not unseated by temporary pressures

Special compositions

Occasionally, a crowd of people may have a high concentration of some human characteristic especially relevant to the processes of collective behavior. For example, irrationality is often ascribed to crowds (Le Bon, 1895; Martin, 1920). But few observations have been made of crowds of people whom we know to be irrational, that is, mental patients. If, as some say, crowds are paranoiac, we ought to ask: What is a crowd of real paranoiacs like? Do they bear any resemblance to the picture of the "normal" mob described by Le Bon? Would different categories of mental illness lead to crowd reactions of predictably different sorts?

Similarly, the term "childlike" is often used to describe crowds (Strecker, 1940). Why not look at crowds of children? We know *they* are childlike. Do they resemble adult crowds, or is there an important developmental aspect to collective psychology, in the sense that children and adults are governed by different crowd principles?

The importance of language, and the communication of symbolic meaning through slogans, can be studied by the observation of those for whom the factor of language is eliminated. Can crowds of deaf persons get worked up despite the absence of an auditory channel? Can a multilingual crowd, of the sort found at an immigration center, achieve the unity often felt to depend on commonly understood slogans and the harangue of a leader? (Babel crowds, according to Genesis, lead only to confusion and frustration of all concerted action.) It would be easy enough to put a man who does not speak English into an English-speaking crowd and note his reaction. Is he infected with the crowd's excitement anyway? If so, how are we to reinterpret the importance of language in the contagion process?

INFORMATION FLOW IN THE CROWD: RUMOR

Often, there is a process of information seeking and communicating among members of a crowd. Prior to a riot, for example, a great deal of distorted and exaggerated information passes from one participant to another (Lee and Humphrey, 1943; Norton, 1943).

Several theorists have dealt with this communication process as an integral part of crowd theory. Smelser (1963) felt that rumors and related beliefs arise when structural strain is not manageable within the existing framework of action. Thus, rumors are to be expected in panics, crazes, and riots, but may also be part of long-term disturbances such as revolutionary movements and religious secessions. Rumors restructure an ambiguous situation by explaining what has happened, by reporting what is happening, and by predicting what will happen (Smelser, 1963).

The information function of rumors has also been stressed by Turner and Killian (1957) and by Lang and Lang (1961). Rumor allows the individual to refer back to the group for a verified conception of the situation. Once he is able to ascertain that his conception is shared with others, the member of the crowd becomes more willing to act. According to this view, rumors are thought of as collective decision-making processes in which norms emerge to coordinate the action of individual members. A rumor will persist when a collective definition is necessary for action and previous conceptions fail to supply a basis for definition or institutional structures are not adequate to coordinate action.

These theoretical formulations rest heavily on the work of Allport and Postman (1947), in which rumor intensity (both incidence of rumor and rapidity and extensive-

ness of transmission) was asserted to be an unknown function of the product of interest in the matter being transmitted and ambiguity (that is, incompleteness or unverified character of information). Thus:

$$\text{rumor intensity} = f(\text{interest} \times \text{ambiguity}).$$

Allport and Postman (1947) further agreed that, in the course of being retold, rumors undergo *leveling* (becoming shorter, more concise, more easily grasped) and *sharpening* (becoming selective with a limited number of details perceived and focused on). Just what elements of the rumor are leveled and sharpened depends on the process of assimilation, which is a function of the cognitive and emotional content of the listener's mind.

The Allport-Postman theory and the laboratory experiments on which it is based have been greatly debated. DeFleur (1962) strengthened the theory by showing that evidence for it can be obtained in field as well as laboratory experiments. He gave housewives a pound of coffee and told them a simple slogan, promising another pound if the slogan was remembered three days later. In addition, 30,000 leaflets were dropped, offering a pound of coffee to all who knew the slogan. DeFleur found evidence that the slogan underwent both leveling (shortening) and sharpening (selecting and exaggerating).

However, Peterson and Gist (1951) found no serious distortion during a period of public concern in a community in which there had been a rape and murder of a 15-year-old girl. There were a number of interpretive and speculative propositions put forth concerning the event, but no evidence of leveling or sharpening was found. Peterson and Gist concluded that it was invalid to extrapolate from the laboratory experiments to real-life (and more serious) situations. Their criticism would apply to the DeFleur study as well, since there, just as in laboratory experiments, emotional arousal was relatively slight.

The view of rumor as a series of distortions leads to the conviction that riots could be prevented if the facts were kept straight. The assumption is that rumors are inflammatory, while facts are not. Thus, in a police manual on the control of riots, this advice is given: "The only antidote for poisonous rumor is fact. Get the facts promptly and circulate them as widely as possible" (International Association of Chiefs of Police, 1963, p. 19). Unfortunately, this represents an unduly optimistic view of social conditions and presumes that the objective facts of social life can never be sufficiently bad to precipitate riots. Moreover, exaggeration is not the only type of distortion that occurs in the flow of information. Information can be distorted when objectively true and atrocious facts are concealed or played down in official pronouncements.

Until recently, the flow of information could be described as a process in which an item of information travels outward from a point of origin. It was possible to trace geographically the spread of information through an assemblage. Each point of transmission was physically contiguous. Contemporary technology, however, has destroyed the elegance of the process. In recent mass rallies walkie-talkies have been used to transmit information over areas physically remote from each other. In the Watts riots persons could be seen carrying transistor radios, listening to news reports, then converging on the scene of incidents reported in the news (Cohen and Murphy, 1966). New communication devices are likely to alter further the character of crowd activities—a development foreseen by Le Bon (1895), who was the first to note the potential effect of mass media on crowd behavior.



Fig. 11. The spread of crowd activity in the English food riots. (From Rudé, 1964.)

Not only does information move within the crowd, but information about the crowd spreads beyond its immediate activities and may itself precipitate further crowd action. In 1964, one riot seemed to trigger another as Harlem, Rochester, Jersey City, and finally Chicago reeled under the impact of racial outbursts. Rudé has carried out the most careful analysis of such phenomena, tracing the nineteenth-century food riots from southern England to the midlands. He was able to discern a clear pattern of development as one riot touched off another (see Fig. 11).

THE CROWD AS A PERCEIVED PHENOMENON

Perception of the crowd, far from being peripheral to the study of crowds, is central to it for a number of reasons. First, the description of crowds, from which theory proceeds, is based on the reports of human observers. Moreover, because of the spontaneous and somewhat unpredictable nature of crowds, it will continue to be based on unaided human observations more than any other source of information.

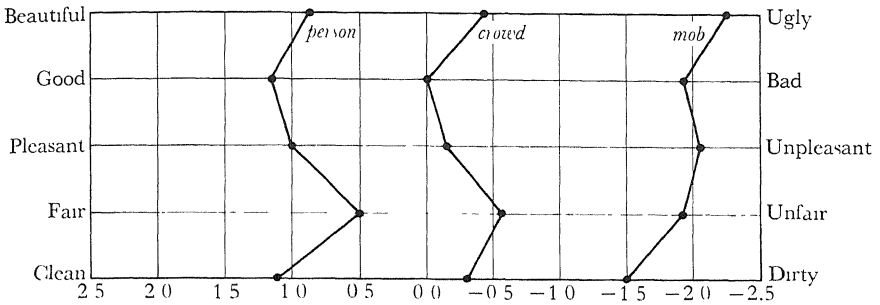


Fig. 12 Attitudes toward the terms crowd, mob, and person. Students at Harvard University were asked to plot these terms on an attitude scale derived from the semantic differential. With regard to evaluative terms, such as beautiful and ugly, bad and good, clean and dirty, mob is given an extremely negative rating, and crowd is less favorably plotted than the word person.

Systematic distortion in reports, of a type reported by Turner (1964, p. 390), may mislead crowd theorists.

Second, the manner in which a participant perceives the crowd around him may greatly alter his own behavior. Ordinarily, the crowd member can be aware of only a small fraction of the crowd's activity at a given time. It is reasonable to guess that he responds primarily to the cues of his immediate neighbors. F. H. Allport (1924) pointed out, however, that though the person responds to the stimuli of those near at hand, he reacts as if they were coming from an enormously greater number of individuals, and this impression of universality is an important mechanism releasing unconventional behavior. The exact perceptual processes mediating the "impression of universality" need to be examined. Similarly, we have discussed anonymity as a mechanism affecting a person's actions in the crowd. But we know very little about the efficiency with which an individual identifies another person in an aggregate. Neisser's work (1964) on the scanning of elements embedded in larger sets needs to be applied to identification of individuals in an aggregate. Programs of research are needed on the effects of set and prejudice on the perception of crowd activity.

Crowds and language

The name we attach to a particular mass in action may not be completely free of our political or social purpose. To apply the term *mob* to an assemblage is to condemn it strongly (see Fig. 12). The very choice of word may come to exercise an organizing effect on the perception of a collective episode. The Harlem episode of 1963 was termed a "riot" by white radio and television announcers. A Negro in Harlem said he thought it was unfair and definitely "political" to label it this way: "It was a spree, or perhaps a melee." He pointed out that there were comparable activities by white college students on the beach or at Newport, and they were not called riots. We are reminded of Roger Brown's (1954) distinction between the *mass* and the *people*. Similarly, under what conditions group activity is termed a *riot*, *spree*, or *melee* is a complex problem involving matters of definition, perception, and prejudgment of the group in question.

THEORIES OF THE CROWD

No man is more closely associated with the study of crowds than Gustave Le Bon. Certainly Le Bon was not the first to write on the topic. In 1837, for example, George Craik published his work, "Sketches of Popular Tumults," describing episodes fully as vivid as any Le Bon could draw on half a century later. To what, then, may we attribute Le Bon's special importance? Craik's work, as in the case of other chroniclers of collective behavior (for example, Holinshed, 1577), was not directed principally to the elucidation of general principles. It focused, rather, on particular incidents such as the Naples riot of 1799 or the Birmingham outburst of 1791. Le Bon, too, relied heavily on chronicle and anecdote, but he employed specific incidents to a more ambitious purpose: he sought to define principles common to all crowds. In his attempt to formulate a general theory of crowds—a theory inductively arrived at, however—lies one reason for his special importance.

THE THEORY OF GUSTAVE LE BON

Le Bon's theory was originally presented in two articles in the *Revue Scientifique* (1895), where it shared space with reports on the absorption of light and the analysis of organic compounds. The reports were subsequently combined and offered between hard covers. But the very fact of Le Bon's launching his theory of crowds in a journal devoted to science offers a further clue to his significance. However deficient his own methods, he wished to locate the phenomenon of collective behavior within the province of scientific analysis.

To be sure, Sighele (1901) disputed priority, charging that Le Bon had stolen his ideas, but Sighele's charge is of minor interest, for both authors drew heavily on popular intellectual currents of nineteenth-century Europe. Independent works on crowd behavior appeared almost simultaneously in several countries. The ferment was greatest in France where Le Bon (1895), Tarde (1898), and Sighele (1901) wrote of the mob, and in Italy where Enrico Ferri had devised the title "Collective Psychology" and steered Sighele in the direction of group research (Sighele, p. ii). Even in America, however, Boris Sidis (1895), using terms, language, and ideas remarkably similar to Le Bon's, produced an analysis of mob psychology. It was Le Bon's work, however, that exerted the most effective influence.

What, then, are the components of Le Bon's theory of the crowd? The first and frequently overlooked element is that collective outbursts do not take place in a vacuum, but arise in particular historical epochs, are conditioned by overarching cultural factors, and in turn impress their character on the era in which they occur. There is, thus, a bifurcation in Le Bon's treatment of crowds. On the one hand, he describes far-reaching mass currents characteristic of an entire era, while on the other hand, relatively limited aggregates, such as street crowds, and the psychological mechanisms that operate in them (Konig, 1958). His first focus initiates an important train of social criticism centering on a general critique of mass society. The crowd is seen as the hallmark of our age, setting a distinctive tone to the times. The individual is submerged in the mass and a crowd mentality prevails. Ortega y Gasset's *Revolt of the Masses* (1932), Fromm's *Escape from Freedom* (1941), Lederer's *The state of the Masses* (1940), and Arendt's *Origins of Totalitarianism* (1954) each develop this conception in highly individual directions.

Le Bon's second focus, that of the actual street crowd, the manner in which it is formed, the way men are transformed by it, and the mechanisms producing the transformation, comes closer to the concepts of psychology and social psychology. McDougall (1920), Freud (1922), Park and Burgess (1921), Blumer (1946), Turner and Killian (1957), and Lang and Lang (1961), among others, have continued to deal with many of the questions of the street crowd first posed by Le Bon.

Le Bon's fundamental idea is that men undergo a radical transformation in a crowd. Once in the grip of the "law of mental unity of crowds," primitive, irrational elements emerge. Immersed in the crowd, a man loses self-control and may act in a bestial fashion. He can be cruel, savage, irrational, a Jekyll turned Hyde with the crowd itself as elixir. He performs actions that would shock him if carried out when alone. There is a transformation of the first magnitude when a man enters a true psychological crowd.

Such a crowd is dependent not on numbers, but on the "disappearance of conscious personality" and the turning in a fixed direction of the ideas and sentiments of individuals composing such a crowd. There must be a common stimulus before a true psychological crowd is formed. Crowd characteristics appear as emergent properties not predictable from an acquaintance with solitary man. The overarching emergent is nothing less than a *collective mind* (Le Bon, 1903, p. 27):

Whoever be the individuals that compose it, however like or unlike be their mode of life, their occupations, their character, or their intelligence, the fact that they have been transformed into a crowd puts them in possession of a sort of collective mind which makes them feel, think, and act in a manner quite different from that in which each individual of them would feel, think, and act were he in a state of isolation.

Effects

1. A crowd exercises a dramatic leveling effect on all who are a part of it. No matter how different in aptitude, talent, or temper they may be in an isolated state, in a crowd men become alike. Le Bon explains the *homogeneity* in crowds not merely as the effect of contagion, but by reference to a rudimentary conception of personality. Personality consists of two parts, a superficial conscious layer, where differences between people are located, and an unconscious part which is fundamentally similar from one person to the next. In the crowd, the conscious personality evaporates and with it those superficial differences observable among men.
2. Crowds are intellectually inferior to the individuals who compose it, and manifest all the properties of a retarded mind. A crowd displays rapid shifts of attention, readily accepts fantastic assertions in the absence of evidence, is swayed by images, slogans, and the harangues of a leader.
3. In a crowd, ordinary persons become capable of violent actions that are alien to the solitary individual. The restraints normally governing action are cast off; savage, destructive behavior comes to the fore. "In the life of the isolated individual it would be dangerous for him to gratify these instincts while his absorption in an irresponsible crowd in which in consequence he is assured of impunity gives him entire liberty to

follow them" (1903, p. 57). Crowds of decent individuals engage in wanton destruction and indiscriminate murder.

4. Exaggerated emotionalism also comes into play. Participants are intensely excited by fanatical leaders, displaying impulsivity and proneness to extremes of feeling. But, in truth, Le Bon's description of crowd characteristics is less a specification of a given number of properties than a virtually limitless catalog, with a heavy emphasis on all that is stupid, bestial, and primitive in man. (A minor exception occurs in the case of crowds exhorted to heroism.)

Mechanisms

The emergence of crowd properties is brought about by three principal mechanisms:

1. *Anonymity*. Solely from numerical considerations the person in the crowd feels a sense of *invincible power*. The feeling arises when an individual's sense of responsibility disappears, and this in turn is due to a more fundamental fact, the *anonymity* of the individual in the crowd.
2. *Contagion*. Le Bon had been trained as a physician and, impressed with the involuntary manner in which one person contracts a disease from another, perceived a similar mechanism at work in the crowd. He conceived of the state possessed by one person spreading to others like an infectious disease.
3. *Suggestibility*, the third and most important mechanism giving rise to crowd behavior, is a person's uncritical acceptance of the imperatives addressed to him: "... by various processes, an individual may be brought into such condition that having entirely lost his conscious personality he obeys all suggestions of the operator who has deprived him of it and commits acts in utter contradiction with his character and habits" (1903, p. 31). Hypnotism provides the model. Suggestibility, as in the case of contagion, is an open mechanism. Le Bon does not explain why the crowd accepts destructive suggestions rather than constructive ones.

Critique

Le Bon's work has come in for a heavy dose of criticism in recent times (Hofstadter, 1957; Merton, 1960; Turner and Killian, 1957). What are the deficiencies of his approach?

1. A large part of the criticism concerns Le Bon's style. A practicing journalist, Le Bon did not set down his ideas in tidy, ordered fashion. One confronts, rather, a torrential outpouring of insights and observations, repetitious, exaggerated, and unsystematic.
2. Le Bon continually contrasts the irrationality of crowds with a model of the normal, isolated individual. Hofstadter (1957) argues that such a model is inappropriate, for there is an equal amount of stupidity, irrationality, and emotionalism in the lone individual.
3. Le Bon shifts his object of reference with great rapidity, now talking about mobs, sometimes about publics, and on other occasions about juries and parliaments, without

adequately distinguishing between types. Furthermore, Le Bon selected the most extreme type of crowd, the hostile mob, and used it as a model for all crowds.

4. Much of Le Bon's exposition reflects the prejudices of his era. He was a racist and accommodated his conception of the crowd to the view that the races of man occupy distinctly different levels on the evolutionary scale. He was a political conservative, fearful of the masses, and scarcely a paragraph of his work is free from an evaluative tone reflecting his patrician stance.

5. Le Bon oscillates in his discussion between the characteristics of the crowd and the characteristics of the individuals who compose it. One might interpret such expressions as "the crowd believes, the crowd imagines, or the crowd feels" as simple shorthand expressions for the way individuals who compose the crowd respond. But in view of Le Bon's strongly asserted notion of "collective mind," it is never clear that this is his intention. The crowd is sometimes viewed as a supraindividual entity, endowed with cognitive processes and a capacity for feeling and believing. Floyd Allport (1924) is typical of those modern positivists who reject the concept of "collective mind," treating it as an obstacle to the scientific analysis of crowds.

6. Le Bon's generalizations are based largely on anecdotal and unsystematic evidence. One senses that, at best, he drew the drapes of his apartment window enough to peek at the rabble below, then closed the velour, ran tremulously to his desk, and dashed off his classic.

Despite these criticisms, his work remains interesting. He presented his theory vividly. More important, a certain prescience on Le Bon's part allowed him to prophesy successfully the role of crowds in our time. His analysis of techniques for influencing crowds, with its stress on repetition, conforms closely to methods subsequently employed by twentieth-century dictators.

Le Bon's work also hit the mark in social psychology. There is scarcely a discussion in his book that is not reflected in the experimental social psychology of this century. His analysis of contagion finds empirical expression in experiments on group pressure and explorations of the process of influence. His dissection of belief systems and the way they are modified is given current expression in the vast quantity of research on attitude change. And it is not merely a highly general discussion that Le Bon provides, but a rich storehouse of imaginative, testable hypotheses. (Consider, as an example chosen at random, his assertion: "At the end of a certain time we have forgotten who is the author of the repeated assertion and we finish by believing it," in essence a statement of the "sleeping effect" confirmed by Hovland, Lumsdaine, and Sheffield, 1949.)

The most important question about Le Bon's theory, however, is this: Are his major assertions true? Does the transformation of a decent, solitary individual actually occur in the manner described by Le Bon? Does he become uncritical, emotional, and capable of acts of enormous destructiveness because he is in a crowd? The sight of a rampaging mob does not necessarily imply that this has occurred. An alternative view would stress the factor of *convergence*, that the mob is formed of those persons who are in fact habitually antisocial and who have been attracted to the mob. So the question remains an open one, but for having posed a question of persistent relevance and impact, Le Bon deserves full credit.

THE PSYCHOANALYTIC VIEW OF COLLECTIVE BEHAVIOR

Freud was so impressed with Le Bon's description of the irrationality of crowds that, when writing his own book on the topic (1922), he devoted a sixth of his manuscript to quotations from the Frenchman's work. He was convinced Le Bon had described a phenomenon of great significance, but he was equally certain Le Bon had not adequately explained it. By extending psychoanalytic theory to the realm of group processes, Freud sought to go beyond Le Bon and uncover the unconscious well-springs of crowd behavior.

In Freud's scheme, libidinal ties forge the unity among members of the crowd. They cement members together and constitute the essence of "the group mind." The leader plays a crucial role. Libidinal bonds develop between the members of a group and its leader; these are not reciprocated, because the leader cannot love all members with total love. Since the object choice of members is to this extent frustrated, their libidinal relationship with the leader comes to be based on the more primitive process of identification. This involves introjection of the love object, which is then put in place of the ego ideal. In other words, under the leader's influence, the crowd member renounces his own superego and relegates it to the leader. The leader acquires the same relationship to members of the crowd as the hypnotizer to the hypnotized. He thus takes charge of their critical faculties, and they regress to a state of childlike dependence. While the members' relationship to the leader comprises the major force binding the crowd, a second set of relationships comes into play. Each member sees that the other members have in the leader a common ideal. It is by virtue of this common ideal that members also identify with each other ("they are similar to me because they share my leader"). But ties with the leader remain prepotent, and his removal leads to disruption of the group unless a substitute is found. Freud defined "leader" in sufficiently broad terms that it could include symbolic heads of collectivities such as Christ, God, or King. Even an ideal, such as the revolutionary slogan of "Liberté, égalité, fraternité," could qualify, and the crowd could without limitations of conscience exact blood in the name of the revolution.

Violence in the crowd becomes possible, therefore, because the participant is no longer checked by his own superego, but depends on the conscience of the leader. If this is so, then crowds are more or less irrelevant to Freud's explanation of crowd violence; the necessary and sufficient element is the leader. One ought to expect an equally great capacity for violence in a minimal authority situation, in which one person has subjected himself to the authority of a leader, whether or not others are present.

Freud also accepted Le Bon's description of the homogeneity of crowd members. In part, homogeneity is due to the fact that all members come to share a common ego ideal. But there is more to it. Narcissism, the investment of libidinal energy in oneself, works in ordinary circumstances to preserve individual differences and create aversions toward the peculiarities of others (Freud, 1922, p. 43):

[But] individuals in the group behave as though they were uniform, tolerate the peculiarities of other members, equate themselves with them, and have no feeling of aversion toward them. Such a limitation of narcissism can, according to our theoretical views, only be produced by one factor, a libidinal tie with other people. Love for oneself knows only one barrier—love for others.

Thus the principle of the conservation of energy is invoked to explain group homogeneity. In the crowd, the energy required to individualize oneself is withdrawn from the self and is used to cement ties among the members of the crowd and between the members and the leader.

On the whole, it is not easy to subject Freud's theory to empirical tests. Milgram's (1965) studies of obedience to authority lend some experimental support to the view that ordinary persons can relegate superego functions to a leader and act without conscience against another person. But how can one demonstrate that relations among group members derive from ties established with a leader? Since hypnotism serves as the model of the leader-follower relationship, perhaps a group of strangers could be hypnotized; once ties are established between each of the group members and the hypnotizer, bonds should automatically form among the members, and these bonds could be measured by appropriate sociometric devices. Such a procedure, of course, would be heartily disavowed by the orthodox Freudian. Only the standard methods of psychoanalytic inquiry—couch, free association, and all that—could provide appropriate evidence.

One is struck also by the relative *absence* of leadership in recent collective episodes, and indeed, the inability of potential leaders to assume control of a lawless mob. Thus, in the civil rights riots of the 1960's, on several occasions (Waskow, 1966) responsible members of the Negro community tried to becalm tumultuous mobs whose energy seemed to derive not from leaders but from the spontaneous expression of long-standing grievances. Leaders neither initiated the riots nor could they end them.

The importance of Freud's approach lies, in part, in the broad influence it has exerted. A number of works on crowd behavior have been inspired by the psychoanalytic view.

E. D. Martin (1920) was one of the first to apply Freudian principles to an explanation of crowd action, even beating out Freud by a year (the original German version of Freud's book on crowd psychology was published in 1921). Martin accepted the idea of an unconscious mental life, and the accompanying doctrine that real motives are often repressed when they are antisocial: "... a general disguising of the real motive is a characteristic phenomenon of dreams and of mental pathology, and occurs in the crowd by fixing attention of all present upon the abstract and the general" (p. 49).

Each type of crowd (mob, panic, etc.) corresponds to a particular type of repressed impulse that seeks release. The release of antisocial impulses is disguised in the crowd by the use of lofty slogans and ideologies, such as "Liberty, equality, fraternity" or "Bring the boys home." These credos stand in the same relation to the real motives of the crowd as the manifest content of a dream stands in relation to the repressed wish. Moreover, the nature of the repressed material is similar: in both cases it is material that is not acceptable by the standards of conventional morality. According to Martin, "The crowd's spirit will occur most commonly in reference to just those social forms where repression is greatest—in matters political, religious, and moral" (p. 50). Martin fails to explain, however, why the most important domain of psychic repression according to psychoanalytic theory, sexual impulse, does not find more conspicuous release in crowds, give or take an occasional bacchanal.

Martin asserts there is a pathological component to crowds. In the manner of paranoids, crowds sense persecution as well as delusions of grandeur. There is denial.

The crowd often projects onto others impulses that are unacceptable to itself. However (p. 106):

The crowd delusion of persecution, conspiracy, or oppression is . . . a defense mechanism The projection of this hatred on those outside the crowd serves not so much, as in paranoia, to shield the subject from the consciousness of his own hatred, as to provide him with a pretext for exercising it.

Only when members of the crowd are unaware that its lofty preachments are only pretense can it carry out the release of forbidden impulses. Penetration of the disguised material is resisted. Like the wary analysand, the crowd may be extremely intolerant toward those who threaten to reveal its true motives. The crowd cannot tolerate disagreement with its professed purposes, and silences the dissenter with fists.

Redl (1942) attempted to supplement Freud's analysis of the leader's role. His concern was much the same: an examination of the emotional and instinctual events in the members of groups, especially those which happen to center on some focal personality. This focal personality, however, is not quite identical with the "leader" in Freud's sense. Redl's contribution is his terminological refinement, according to which the word "leader" is seen as applying to only one type of role of the person central for group formation and relationships with members, different names being reserved for other forms.

Redl specified ten types of central persons around whom group-formation processes occur. The difference between the various types is based on role differentiation and, specifically, on whether the central person is an object of identification, an object of drives, or an ego support. When the central person is an object of identification, he may be incorporated on the basis of love into the conscience ("Patriarchal Sovereign") or into the ego ideal ("Leader"), or incorporated on the basis of fear through identification with the aggressor ("Tyrant"). The central person may also be an object of love ("Love Object") or aggressive drives ("Aggressive Object"). Finally, as an ego support, the central person may provide means of drive satisfaction ("The Organizer") or means of dissolving conflict situations through assuaging guilt and anxiety.

Janis (1963) applied psychoanalytic formulations to the behavior of groups subjected to extreme anxiety under conditions of external danger (for example, soldiers in battle, surgical patients). He noted a marked upsurge of dependency reactions in such groups and hypothesized that this was the product of a reactivation of separation anxiety. He argued that fear of being abandoned by one's parents persists in latent form in adulthood and is manifested in the need of individuals exposed to danger to be reassured that the significant persons in their lives will not break existing affectionate ties with them. There is a process of psychological replacement that often occurs in such conditions, whereby a company commander may become a symbolic representative of the father, or a fellow soldier a substitute for a brother.

Several writers noted below, though not adhering in close detail to Freud's own theory of group behavior, account for participation in mass events in terms of psychoanalytically oriented concepts.

Some writers emphasize the contribution of the psychological problems of leaders to the shaping of destructive crowds (Gilbert, 1950). Others view the leaders as

merely the suppliers of authoritarian doctrines required by the personalities of their followers. An extreme statement of this position is *The Mass Psychology of Fascism*, published in Germany in 1933 by Wilhelm Reich. Reich contended that "a Fuehrer or the advocate of an ideology can succeed only if his ideology or program is concordant with the average structure of the mass individual" (1946, p. 29). Reich traced the attractiveness of Hitler to the patriarchal position of the father in the German family, which "requires sexual inhibition" and eventually causes submission to all authority. Like Reich, Erich Fromm in *Escape from Freedom* (1941) also stressed the role of authoritarian dispositions among the German lower-middle class in creating a receptive milieu for Hitler. Unlike Reich, however, Fromm traced authoritarian character to both economic and psychological factors. Such factors, in combination, may produce a desire for authority which Fromm felt defined the "social character" of a group, and cause it to gravitate to ideologies presented by authoritarian leaders.

Frustration-aggression hypothesis

The frustration-aggression hypothesis, an extension of psychoanalytic thinking, was formulated by a group of psychologists at Yale University in the 1930's and applied to the analysis of some forms of collective behavior. The basic postulate introduced by the Yale group asserts "that the occurrence of aggressive behavior always presupposes the existence of frustration and, contrariwise, that the existence of frustration always leads to some form of aggression" (Dollard *et al.*, 1939, p. 1). This premise is elaborated with predictions about the relative amount of aggression to be expected under different circumstances, and about the people against whom aggression would occur. One prediction that relates to *amount* of aggression is that the fury of the destructive reaction will vary with the indignity of the disappointment, or, in the words of the theorists, with the "degree of interference with the frustrated response" (p. 30). An example of this relationship in collective behavior is the following (p. 31):

The annual per acre value of cotton was computed for fourteen Southern states for the years 1882–1930. The correlation between this index and the number of lynchings in these same fourteen states was $-.67$; i.e., the number of lynchings (aggression) increased when the amount of interference increased.

The "interference" referred to here is the low price of cotton brought about by market conditions or crop failure. Low cotton prices would affect most acutely the type of "poor white" who composes the rank and file of lynch mobs. This same group has been pinpointed with other indices, such as statistics showing that the most economically deprived Southern counties have been responsible for the largest number of lynchings (Hovland and Sears, 1940, pp. 301–310).

With regard to the *target* of aggression, the theory predicts that victims would be selected in the following order: (1) the "source" of the frustration, (2) other persons, (3) fantasy objects, and (4) the aggressor himself. In collective behavior, an illustration demonstrating the preferred (retaliatory) form of aggression is that of post-World War I race riots in which "the invading and frustrating Negroes were known directly and resented" (Dollard *et al.*, p. 152). The mechanism of reluctantly displaced aggression is illustrated by Nazi anti-Semitism (pp. 154–156). The difficulty

with the latter example is that the source of frustration is not easy to specify, since it may include not only the Treaty of Versailles and the impact of inflation and joblessness (Dollard *et al.*, pp. 153–154), but also the hurts sustained by growing German children in pre-World War I authoritarian homes (Adorno *et al.*, 1950; Fromm, 1941). Further, some allowance must be made for the fact that many Nazis may have regarded Jews as the cause of their economic problems to begin with—without having to “displace” from another perceived source of frustration. In other words, whereas the theory sheds important light on a mechanism involved in destructive collective behavior, it is less useful in specifying the nature of the agents involved.

CONTAGION, CONVERGENCE, AND EMERGENT NORM THEORY

Turner (1964), who is chiefly responsible for the statement of emergent norm theory, continually contrasts this approach with theories organized around the ideas of contagion and convergence. Each of these is a mechanism to account for the uniformity of behavior in crowds, the heightened emotion, and the violent antisocial character of the behavior.

Contagion

Contagion is the spread of affect or behavior from one crowd participant to another; one person serves as the stimulus for the imitative actions of another. Bagehot (1869), Le Bon (1895), and Tarde (1903) relied heavily on the mechanism of contagion. McDougall (1920) explained the contagion of feeling by his theory of “the sympathetic induction of emotion,” stating that the facial and bodily expression of an emotion in one person instinctively arouses the same emotion in a viewer. He failed to account for those occasions when anger in one party evokes terror in another, or when an expression of lust in the male evokes revulsion in the female. Floyd Allport (1924) extended the notion of contagion by proposing the idea of a *circular reaction*. Quite simply, a person who stimulates another in a crowd sees or hears the intensified response which his behavior has produced in the other; he is in turn restimulated to a higher level of activity by the sight of his neighbor, and so on until ever higher peaks of excitement are achieved. Blumer (1946) elevated the circular reaction to the status of the fundamental mechanism of collective behavior, defining it as “the type of interstimulation wherein the response of one individual reproduces the stimulation that has come from another individual and in being reflected back to this individual reinforces the stimulation. Thus the interstimulation assumes a circular form in which individuals reflect one another’s states of feeling and in doing so intensify this feeling.” All this is presumed to operate in a roughly mechanical fashion beyond the control of the participants.

Contagion is facilitated by the process of *milling*. In milling, individuals move around one another in more or less aimless fashion, as sheep or cattle do in a herd. They present each other as stimuli, and in turn react to the emotional tones of others. Milling is a process that helps homogenize the crowd and increases the general level of excitement. A spectacular feature of social contagion, according to Blumer, is that “it attracts, and infects individuals, many of whom originally are merely detached and indifferent spectators and bystanders. At first, people may be merely curious about the given behavior, or mildly interested in it. As they catch the spirit of excite-

ment and become more attentive to the behavior, they become more inclined to engage in it" (1946, p. 176).

Is it possible that an initial receptivity to the purposes of the crowd may be a necessary prerequisite of susceptibility? Consider an individual sent into a crowd as an agent of the police to report on crowd vandalism. It seems unlikely that he will be infected with the rising excitement of the crowd. This would suggest that emotional contagion cannot operate in the purely mechanical fashion suggested by Blumer and others. The attitude of the crowd member, how he defines himself relative to the crowd, is of critical importance, and a measure of consent is implied in the crowd participant. The riot police sent to break up a political rally rarely find themselves cheering for the demagogue.

Contagion theorists must face several problems. First, the limits of contagion have not been adequately explained. Sometimes a particular behavior or feeling spreads through a crowd, but often it does not. A failure to specify the conditions of successful contagion is a conspicuous deficiency of this approach. Under what conditions will resistance develop? Perhaps the experimental analyses of McGuire (1962) of the conditions under which a person can develop a resistance to persuasion can be applied to the crowd situation. There is also a failure to specify the spatio-social boundaries within which contagiousness will operate. If contagion accounted for the spread of looting and antisocial behavior in the Los Angeles riot of 1965, why did it not spread in limitless fashion until the entire population of Los Angeles was engaged in these forms of behavior? What are the factors that restricted its spread? (One obvious factor is that a portion of the city was sealed off by armed guards, but even within this quarantined area, sections remained unaffected.)

Finally, contagion, in and of itself, indicates neither the content of the behavior to be diffused nor the variety of shifts that spread through crowds. It leaves open the question of the initial source of the behavior to be diffused and the conditions under which one source will be preferred to another. However, contagion is not so much a theory as it is a specific mechanism which may function in the context of other theoretical mechanisms.

Convergence

If the spread of infectious disease serves as the analog for contagion models, the leukemia ward of a hospital can illustrate convergence. The patients share a common disease, but homogeneity is not due to the fact that they infected one another; rather, they converged on the ward. While contagion theory stresses the transformation of the normal decent individual who is infected by the crowd, convergence theory argues that the crowd consists of a highly unrepresentative grouping of people drawn together *because* they share common qualities. The common qualities preceded formation of the crowd. A hostile mob consists of that small segment of the population unusually prone to aggressive behavior; they have gathered in a crowd as an excuse for expressing qualities which each possesses in isolation. For convergence theories, the composition of the crowd, rather than the interactional mechanisms, becomes the critical focus.

In the mid-1960's a popular singing group known as the Beatles sang before crowds of screaming and swooning teenage girls. The intense emotional expression manifested by the audience may be treated as the effect of contagion, but more likely

it represents, at least in part, the convergence of a group already disposed to react in such a manner. When news of a lynch spreads through a Southern town, persons respond to it selectively. Though a great many are subjected to the information of time and place, only a fraction of the town appears. It is likely that these are people most prone to engage in the hostile, punitive act of lynching, with only minimal social support (Cantril, 1941). Thus, convergence, rather than contagion, appears to be the key mechanism. When convergence theory is employed, it is no longer necessary to look for mechanisms within the crowd that bring about homogeneity, since the likeness of members occurs in the very process of crowd formation. Different causes will attract different subsets of the population.

The "outsider," one variant of convergence theory, is frequently invoked in explaining mob violence in an otherwise peaceable town, and indeed, in the case of marauding motorcycle toughs, such as "Hell's Angels," or the English Mods and Rockers riots at English seaside resorts, the accusation seems largely justified (*New York Times*, May 24, 1964).

Shellow and Roemer (1966), reviewing outsider riots centering on sporting events, noted several factors common to them (pp. 12-13):

An influx of outsiders into a small town or circumscribed amusement area, where the number of outsiders was large relative to the number of local inhabitants and police.

The outsiders were distinguished from "locals" by some common feature—an intense interest (such as motorcycling), an age group (college youth), race, etc.

The distinction between "locals" and "outsiders" was often made more visible by differences in dress, argot, and other expressive behavior.

A more subtle application of the convergence model attempts to find behind instances of collective outbursts "categories of people within the community who are not fully committed to the dominate mores" (Turner, 1964, p. 387). The prevalence of Negroes in incidents involving wide-scale looting (New York, Los Angeles) may be explained by the fact that many have not accepted white middle-class values, and consider it fair game to acquire goods in moments of social upheaval. But even among the Negro group, only a fraction of the total community participated in the looting, again representing a convergence of those most prone to antisocial behavior.

Convergence is a more elitist theory than contagion, since it implies that all antisocial collective behavior stems from the rabble and that decent, law-abiding citizens are not converted into the lawless.

One merit of convergence theory is that the mechanism can cover a broad range of collective episodes, from the riot and lynch to the deviant social movement. The uniformity of action of a gang of toughs assembled for a brawl, as well as the uniformity of belief among members of the John Birch Society, may both represent the convergence of persons who possessed similar beliefs and action dispositions prior to aggregation.

A difficulty of convergence theory is that of explaining the shifting direction of crowd activity. Assuming that persons possessing a similar behavior disposition are brought together because each wishes his presence in the crowd to serve as an excuse for realizing the disposition in action, how can we account for the continuing homogeneity of the crowd even when its purposes shift? Nor does convergence explain

why the like-minded persons come together in the first place, since it implies in its purest form that any one of them would as readily carry out the behavior in isolation. If this is not true, if the dispositions are latent until the like-minded persons converge into a crowd, then we are still left with the problem of explaining what specific mechanisms of the crowd lead to the conversion of the latent impulse into overt action. Perhaps *anonymity* (Le Bon, 1895), or the *feeling of universality* (F. H. Allport, 1924), or the sense of *invincibility* (Le Bon, 1895) acts on those who have assembled. But something must be added to the mere fact of convergence to transform the latent impulse into action.

The issue of contagion versus convergence comes down to this: does a crowd displaying antisocial behavior consist of an ordinary group of persons brought to a state of violence by interstimulation, or is it made up of a special collection of individuals who have converged on the scene, possessed of a set of errant impulses not shared by the population at large? Contagion and convergence are not, of course, mutually exclusive explanations. Both mechanisms could be at work.

Emergent norm theory

The explanatory concepts of Le Bon, Freud, Sighele, and McDougall are rooted in the structure of personality and the manner in which the individual is changed by the crowd. Emergent norm theory, as proposed by Turner and Killian (1957) and Turner (1964), employs concepts derived from the study of small groups. Numerous studies in this field show that a group of people allowed to interact freely among themselves will, in time, evolve common standards of behavior (Asch, 1951; Lewin, 1947; Sherif, 1936). Once the standard (or norm) is established, it exercises a constraining effect on group members. There is pressure to adhere to the standard and reluctance to violate it. The emergence of rules of behavior constitutes, from this standpoint, both the chief problem for the study of collective behavior and its most distinctive characteristic.

Emergent norm theory holds that the much heralded *homogeneity* of crowd action, assumed by both contagion and convergence theorists, is false. In fact, most members of a so-called "aggressive crowd" are not engaged in hostile activity but are simply interested and curious bystanders. The conspicuous actions of relatively few active individuals come to be attributed to the entire crowd. The problem, therefore, is not to explain homogeneity, but rather to explain why the illusion of homogeneity arises. The answer is that a consensus on appropriate conduct is established in the crowd, and crowd members as well as observers refer to this norm, rather than to the actual actions of crowd members, in their characterization of the assemblage. In the establishment of the crowd norm, the action of a few conspicuous and active members comes to be perceived as the dominant course of action. Because it is so perceived, it constrains others to act in a manner consistent with it, inhibits contrary behavior, and justifies converting others to this particular line of action.

Norm theory states, then, that a person acts in a crowd as he does because he perceives it appropriate or required, and not because he is mechanically infected by group emotion or because he has a blind propensity to imitate.

Furthermore, collective behavior is typically characterized by an attempt to define an ambiguous situation and to find cues as to what one is supposed to do. Rumor refers not to the successive transmission of a packaged story with increasing distor-

tion over time (as in the studies of Allport and Postman, 1947), but to a group effort to define what is going on. If there is a search for leadership, it is not Le Bon's "thirst for obedience" nor Freud's identification process, but the desire on the part of members to have others take the responsibility for starting an action that is, initially, of questionable legitimacy.

Emergent norm theory differs in six ways from contagion theory:

1. Norm theory argues that complete uniformity of crowd action is an illusion. Many crowd members simply stand around and by their passivity lend implicit support to the active minority. The proposition that homogeneity is not present in crowds is of great significance. For half a century, social scientists have uttered the catchword "homogeneity" with conviction. Now it is called into question. Moreover, the question can be resolved by resort to the facts. Photographs, films, and videotapes of collective outbursts need to be carefully scrutinized by observers instructed to categorize the behavior in process. This must be done for representative types of crowds, adequately sampled through different phases of their development. It is a mark of our primitive level of knowledge about crowds that not a single tally of this sort exists at the present moment.
2. Under contagion, persons are unwittingly infected with the emotions of others; under a norm, people suppress incongruous moods, but do not necessarily participate in the crowd emotion. They take note of the standard and regulate their behavior appropriately. A buoyant, chattering person, wandering into a funeral service, quickly becomes quiet. It is not automatic infection with the mood of the mourners, but perception of the appropriate norm of behavior, that silences him. In a sense, a "law of mental unity" operates in Turner's theory; it is limited, however, to the unity brought about by the common acceptance of a norm, and does not extend to the indiscriminate contagion of feeling.
3. Contagion works best, Turner asserts, with situations of high emotional arousal, agitation, and excitement. And the general tone of Le Bon, Allport, and Blumer supports this impression. Emergent norm theory, on the other hand, is equally at home with excited as with somber or reverential states. (Despite Turner's assertion, contagion of sad, respectful, or reverential states would not seem beyond the limits of the contagion concept, and Le Bon specifically discusses waves of religiosity spreading over a crowd.)
4. Contagion theory argues that most communication in the crowd consists of messages expressive of the dominant emotion and suggestions for action. Norm theory predicts that most communication will be directed toward (1) attempting to arrive at a conception of what is happening, (2) supplying justification for a course of crowd action, or (3) dispelling conventional norms. A content analysis of crowd communications is required to test the different predictions.
5. Contagion theory fails to account for the limits on crowd excitement and action. Given the infectious spread of emotion and the circular reaction, the crowd should grow ever more extreme in its actions and increasingly agitated over time. A norm, however, can contain a statement of the limits of behavior and define its boundaries. In the Los Angeles riot of 1965, looting and destruction of property were common, but the rioters did not indiscriminately destroy human life. If savage impulses were released, as Le Bon's version of contagion theory would argue, the savagery was re-

markedly well directed, for whatever sniper fire occurred was directed almost exclusively at the police and related symbols of law enforcement. Destruction was focused, as if regulated by a clearly defined understanding of limits and legitimate targets.

6. Norm theory states that a person must have a social identity if group norms are to be effective over him. Therefore the control of the crowd is greatest among persons who are known to one another. Contagion theory, in the Le Bon tradition, argues the opposite, that anonymity facilitates the spread of crowd emotion and action. Again, a direct empirical confrontation is posed between the two conceptions of collective behavior.

Emergent norm theory contrasts sharply with psychoanalytic interpretations of collective behavior. Martin (1920), as we have seen, recognized that there were many normative sentiments expressed in the crowd; these were not *causes* but merely masking mechanisms, under whose guise repressed impulses could find release. This view explained the seeming paradox that crowds could be both brutal and self-righteous simultaneously. In contrast, emergent norm theory finds primary causal significance in the very material psychoanalysis treats as epiphenomenal. Turner's theory is weighted far more heavily on the rationalistic side.

Emergent norm theory, as it now stands, says little about the content of norms that will arise in collective situations, and specifically, on the violence frequently associated with collective action. Why does one norm emerge rather than another, and what impulses lie behind the emergence of norms that, to all appearances, are destructive not only to a set of outside victims but to the crowd participants as well?

Emergent norm theory does not fully dispense with the idea of contagion. Rather, it displaces the problem of how an emotion comes to be diffused in a crowd, to that of explaining how a group standard comes to be accepted by an aggregate of individuals. One deals, then, with the spread of a cognitive element, but even a cognitive element must start somewhere, and the process of its diffusion is still problematical. While the theory denies homogeneity of feeling and action, it posits a new form of homogeneity: the shared belief in an appropriate standard of conduct by crowd participants.

Because it points to an empirical reexamination of the crowd, and offers a fresh interpretation to crowd episodes which is tied at virtually every point to possible empirical inquiry, Turner's theory deserves the serious attention of social psychologists.

SMELSER'S SOCIOLOGICAL APPROACH

Where other writers content themselves with essayistic approaches to the subject, Smelser (1963) wields a theory that is, above all, systematic. That is, the work in its main outlines is generated from a small number of ideas that are continually reapplied at differing levels of abstraction until a complex theoretical structure is built up. The two main ideas from which the fabric of Smelser's theory is spun out are (1) the notion of *value-added determinants* and (2) the notion of *components of social action*.

According to Smelser (1963), collective behavior occurs when people prepare to act on the basis of a belief that focuses on changing some aspect of society, but it arises only when there is no means of attaining the desired goal through normal institutions of society. It is behavior that occurs, therefore, outside of institutions, and it is behavior that is purposefully oriented toward change.

Smelser's theory strives to be fully sociological in its perspective. In this respect, it departs from the style of psychological analysis initiated by Le Bon, Sighele, and others. It seeks to answer two basic questions: (1) What determines whether an episode of collective behavior of any sort will occur? (2) What determines whether one type of collective behavior rather than another will occur (say, a riot rather than a panic)?

In Smelser's scheme a sequence of six determinants lies behind every episode of collective behavior: (1) structural conduciveness, (2) structural strain, (3) growth and spread of belief, (4) mobilization for action, (5) precipitating factors, and (6) social control. The determinants do not occur in random sequence, but are organized according to the logic of value added.

By "value added," Smelser means that each of the six determinants, beginning with social conduciveness, is necessary for the determinant that follows it and establishes the limits within which the next determinant can operate. Structural strain, for example, must occur within the boundaries established by structural conduciveness, and so on down the line. Temporal sequence is not at issue, since Smelser is concerned with building a formal system that depends on logical relationships only.

The Berkeley uprising

The determinants and the way they are organized are best understood when brought to bear on the analysis of a concrete case. The Berkeley student protest of 1964 will be used for this purpose. Lipset and Wolin (1965, pp. xi-xii) describe the events:

As the result of a series of events unprecedented in American university history, the Berkeley campus community lived in a state of unrelieved tension and continuous agitation from September until January. The immediate cause was an announcement by campus officials that a twenty-six-foot strip of land at the entrance to the campus, previously thought by most students and faculty to belong to the City of Berkeley, was the property of the university and subject, therefore, to existing university regulations dealing with political activity. This particular strip happened to be the place where students traditionally conducted political activity involving solicitation of funds and members for off-campus political-action groups, without interference. A student protest movement was rapidly organized, The Free Speech Movement (FSM), and it advanced demands for the drastic reform of university rules and regulations affecting student political activity on campus. A running battle, which lasted almost the entire semester, developed between the administration and the FSM. Before the dispute had run its course, the faculty was drawn in, and the effects of the controversy were registered throughout the entire state. The governor became involved; members of the state legislature began to take sides; thousands of letters and telegrams were sent by alumni, prominent citizens, and interested individuals and groups. Meanwhile the campus was the scene of many unacademic events. There were endless protest meetings, rallies, and silent vigils, with crowds sometimes reaching as many as 7000; there were repeated violations of university rules and civil laws; on two occasions hundreds of police were massed on campus, and the threat of violence seemed immediate and inevitable; three sit-ins occurred, the last culminating in the occupation of the central administration building by 800 students and their

forcible removal by an almost equal number of police; and a sympathy strike, launched by teaching assistants, severely interrupted classroom routines. One of the world's largest and most famous centers of learning was brought to the edge of collapse.

Structural conduciveness This, the first determinant in Smelser's value-added sequence, refers to the very general conditions of social structure that are necessary for a collective episode. Certain fundamental social conditions underlay the Berkeley movement. First, at Berkeley, as at other American universities, administration and student groups have clearly definable identities, and each embodies a somewhat specialized set of interests. Such differentiation is a necessary preliminary to a social movement. Second, unless techniques are available for instituting normative changes, the movement could degenerate into a mere hostile outburst. At Berkeley, students relied on techniques for forcing normative change that were borrowed from the civil rights movement, most specifically the techniques of nonviolent protest and the sit-in. Further, without communication among potential members, no movement could arise. At Berkeley, physical proximity among students facilitated communication; mimeographed handbills and student publications disseminating views of the movement were abundantly in evidence. A final condition of conduciveness concerns the lack of opportunity for other forms of protest. Students could not, for example, readily migrate *en masse* to another college where conditions were more ideal. This could have acted as a valve to siphon off the energy of the movement. The existence of structurally conducive conditions on the Berkeley campus did not ensure a social movement. It merely laid a possible groundwork. No movement would have arisen in the absence of certain conditions of structural strain.

Structural strain The second determinant of the value-added sequence exists where various aspects of a system are in some way "out of joint" with each other. Strain is a necessary condition of any collective outburst, but it can assume significance as a determinant only within the scope established by the prior conditions of conduciveness. Strain may arise when new knowledge suddenly enables people to do something which had always been desired, but had previously been impossible because requisite skills were lacking. Experience in the civil rights movement and knowledge of its tactics enabled students to strive for a role in policy making which previously had seemed beyond reach.

Deprivation of a once enjoyed privilege can be an important source of strain. At Berkeley, the Bancroft strip had customarily been used for political activity, but as a result of the administration's decision students were no longer privileged to engage in political recruiting on this property. In addition, this action violated the ideal of free speech. Indeed, the Berkeley protest, which came to be known as the Free Speech Movement, took its name from this focus of strain. But strain, as a set of objective sociological conditions, cannot lead to a collective episode unless people focus on the causes of strain and have beliefs on how to alleviate it. Belief, therefore, is the next determinant in Smelser's scheme.

The growth of a generalized belief. The crux of any analysis of collective behavior is to assess under what set of general beliefs the participants are acting. A generalized belief includes (1) a diagnosis of the forces and agents that cause the strain and (2) a belief about a program which, if instituted, will erase the source of strain. At

Berkeley, those who participated in the protest believed that the university administration interfered with their right of free speech, and furthermore, that President Clark Kerr's idea of the multiversity lay behind the unsatisfying impersonality and bureaucratic atmosphere of their institution. Protest of the administration's policy, it was believed, could win for the students the right of full political activity on campus, and force the administration to give up its right of disciplining students for use of campus facilities. The program called for the administration to yield fully on the free speech issue. In a somewhat less clear-cut manner it called for the university to reorganize in a way that would make it more responsive to student needs.

Precipitating factors. Structural conduciveness, strain, and developing beliefs merely set the stage for collective action which, to occur, must be set off by an event. The Berkeley protest was sparked by the announcement that the Bancroft strip could no longer be used for political recruitment. Subsequent incidents in the Berkeley movement were precipitated by other events. For example, the sit-in at Sproul Hall on December 2 was set off by the administration's announcement that it would discipline four leaders for an earlier incident in the protest. A precipitating factor taken by itself cannot cause a collective episode. In order to do so, it must occur in the context of the other determinants of conduciveness, strain, and generalized belief.

Mobilization of the participants for action. Once the previous determinants have been activated, the only remaining necessary condition is to bring the affected group into action. At Berkeley, a ready and experienced leadership existed in the dissatisfied political groups whose tables had been removed in the Bancroft strip. A potential leadership that was trained in the civil rights movement and committed to its tactics was on hand. Mario Savio, a 21-year-old student who had actively participated in civil rights activities, rose to the fore as a popular student leader. On September 2, for example, he had stood atop a police car and incited a crowd to demonstrate against closing of the Bancroft strip. A report of the Federal Bureau of Investigation asserted that some of the leaders of the Berkeley episode were trained agitators acting in the service of foreign causes.

The operation of social control. This determinant "arches over" all the others, for it consists of the ways in which the agencies of control in the social system discourage or encourage collective behavior. In the Berkeley situation, diverse controlling agencies were at work: the administration, the faculty, and the police. Assemblages of students were permitted on campus, but when the students staged a massive sit-in at Sproul Hall, on orders of the Governor more than 800 demonstrators were forcibly removed and jailed. (This was, incidentally, one of the largest mass arrests in American history.) While the sit-ins were not permitted, a considerable amount of protest activity was tolerated by the administration. Social control is not merely a negative feature. Agencies of control may specifically encourage particular kinds of collective behavior. In some degree the faculty performed this function at Berkeley, in giving general encouragement to a norm-oriented movement (Lipset and Wolin, 1965).

The heart of Smelser's analysis of collective behavior, then, consists in an examination of collective episodes in terms of the six determinants. The same six determinants are to be found in each form of collective behavior, and taken together they fully determine the production of a collective episode. Each of the determinants can appear in a number of forms, and the way different forms combine through the six stages accounts for the type of collective behavior that is produced. One pattern leads

to panic, another to craze; other combinations lead to hostile outbursts or social movements. The determinants are not randomly related, but thanks to the logic of value added, nestle into each other like a set of Chinese boxes.

Components of social action

The four "components of social action" provide another major organizing construct for Smelser. The components are taken from the writings of Talcott Parsons (1951) and consist of categories that describe fundamental features of society:

1. *Values express the most general statement of what is desirable in a society. Freedom is a value; so is democracy.*
2. *Norms are more specific than general values, for they provide rules of behavior, or guidelines for the realization of values. For example, if the value democracy is to operate, rules must be formulated that spell out the principles of elections*
3. *Mobilization of motivation into organized action specifies who will be the agents in the pursuit of valued ends, and how the actions of these agents will be structured into concrete roles. A definition of the electorate, for example, could fit into this category, as well as a statement of who may run for office*
4. *Finally, situational facilities, as the lowest component of social action, refer to the means and obstacles that facilitate or hinder the attainment of goals. Voting booths would constitute a facility through which elections are made possible, and the value of democracy is expressed.*

Any readjustment of one of the higher components makes for a change in those components below it, but not necessarily those above it. For example, at the level of situational facilities, voting boxes may be replaced by high-speed voting machines without altering the norm that elections be held, or that democracy be abandoned as a value. But if we proceed in the other direction and replace the democratic value with an autocratic rule, then the idea of elections or an electorate, and of voting boxes, becomes superfluous.

What is the relevance of the components of social action to Smelser's theory of collective behavior?

1. At every point the components may be applied to the determinants for a finer analysis of causation. For example, structural strain is defined in terms of the components of social action. Strain may occur at the level of facilities, at the level of roles, or at the level of values.
2. The components help define the several forms of collective behavior. In the cases of *panic* and *craze*, people prepare to act on the basis of a belief concerning *facilities*. In a *hostile outburst*, people act on the basis of a belief focusing on persons felt to be responsible for the evil on hand (*level of mobilization*). The *norm-oriented social movement*, which seeks to change ways of doing things, but not the overall values of society, comes next. The American civil rights movement of the 1960's, which seeks equality for the Negro, a generally accepted value in American society, is attempting to eliminate segregation, a device that prevents equality. But it does not seek to eradicate basic democratic values. The most radical form of collective episode is the *value-oriented social movement*. It aims to induce societal changes of the most funda-

mental character, that is, at the level of societal values. The French Revolution, which instituted a new set of values for that nation, constituted such a movement. The Black Muslim movement, in the degree that it seeks to replace the democratic value of equality with an ideal of Negro superiority, could be defined as a value-oriented movement.

3. Finally, the general nature of collective behavior comes to be defined in terms of the components of action (Smelser, 1963, p. 71):

... it is a search for solutions to conditions of strain by moving to a more generalized level of resources. Once the generalization has taken place, attempts are made to reconstitute the high level component. At this point, however, the critical feature of collective behavior appears. Having redefined the high level component, people do not proceed to respecify, step by step, down the line to reconstitute social action. Rather, they develop a belief which "short circuits" from a very generalized component directly to the focus of strain. The accompanying expectation is that the strain can be relieved by a direct application of a generalized component.

Consider the case of Negroes in a Mississippi town who are denied access to a restaurant. The major components of social action in this situation, from general to specific, are:

1. *Values: Equality for Americans.*
2. *Norms. The mores of a Southern community. Negroes do not eat with whites. Separate but equal.*
3. *Mobilization (roles): The role of the white restaurateur in preserving the Southern norms Subordinate role of Negroes.*
4. *Facilities: Lack of access to white restaurants.*

These circumstances engender a situation of strain for the Negro community. The search for a solution does not remain fixed at the level of facilities. Rather it tends upward. The difficulty in using the restaurant is seen as interfering with the value of equality. The nature of the relevant value is reconstituted in this way: While equality may have been taken to mean "separate but equal," the strain created at the restaurant leads to a respecification of what equality entails. "Separate but equal" is read out of the meaning of equality. Having redefined the high-level component of the value equality, the Negro community attempts a direct application of this value at the level of facilities. Negro marchers bearing posters demanding "Equality For All" parade before the restaurant and Negro students sit-in at the lunch counter. Members have attempted a direct application of the high-level component (value) to the specific. In doing so, the intermediate components of social action have been short-circuited. The mores of the Southern community have not been changed, nor have relevant persons (in their role of restaurateurs, patrons, waitresses, etc.) come to accept the application of the reconstituted value to the specific level of facilities. It is this situation that gives collective behavior its clumsy and sometimes destructive character.

There are thus two aspects to collective behavior. First, a specific problem at a low level gives rise to a belief that focuses on a higher-level component. The distinctive character of collective behavior, according to Smelser, is that the group then attempts to apply this higher-level value, once redefined, directly to the specific locus of strain. In this respect, collective behavior is akin to magical thinking in that the intermediate instrumentalities for the achievement of a goal are short-circuited. Le Bon, too, sensed the exercise of magical thinking in the crowd, and Smelser's theory gives it a more rigorous theoretical underpinning.

Critique of Smelser

1. The Berkeley movement, which we have used for illustrative purposes, does not fit neatly into any of Smelser's forms of collective behavior. If it was a norm-oriented movement, it possessed few of the enduring features generally associated with such movements. It was temporary, with a relatively transient organizational structure that both arose and evaporated rapidly. Nor could it be termed a hostile outburst, partly because its duration lasted over a period of months, but more critically, because it was a nonviolent episode. Smelser's classification is not fully adequate to an exact characterization of the event.
2. Smelser's theory employs as its central postulate the notion of a generalized belief, implying a unitary outlook at the root of collective action. But it is clear from the Berkeley episode that students with the most diverse and contradictory sets of beliefs were drawn to the protest; it was not a generalized belief, but a series of rather distinct, frequently contradictory, and at times idiosyncratic beliefs that accompanied action (Lipset and Wolin, 1965).
3. Nor is it clear that Smelser's theory meets the single most critical feature of a scientific explanation: that its truth can be denied in the face of contradictory fact. At the outset, it is not possible to coordinate the major concepts of structural conduciveness, strain, etc., to empirical events in an exact and unequivocal manner (Davis, 1964). Social analysts independently assessing the Berkeley episode could not agree on what constituted strain in the Berkeley situation, nor even what constituted the critical precipitating incident (Feuer, 1964; Glazer, 1965; Selznick, 1965). Second, even if it were possible to link each of Smelser's concepts to specific empirical events, it is not clear what propositions are to be refuted. Smelser's scheme is less a theory than a taxonomic structure, a general set of rubrics useful for describing a collective episode but not itself open to disconfirmation.
4. Smelser's value-added theory does not of itself generate hypotheses. The fact that Smelser himself offered insights in such profusion was due to his personal grasp of a wide variety of sociological and historical materials, and to his own ingenuity, rather than to the theory. Turner (1964) tried to apply the value-added theory and concluded it was a useful way of organizing material, but he was not sure that it contributed new knowledge.
5. Finally, we must return to the question: If all collective episodes have the same set of six determinants, why does one type of collective behavior arise rather than another? The levels themselves are merely empty categories. The particular conditions that must obtain at each category determine the type of collective behavior. Where do

these particular conditions come from? Are they specified or derived from the major lines of the theory? The particular conditions are *ad hoc*, derived from other theories, or simply brought in intuitively. Thus the major lines of the theory, the six determinants and the components, are not really theory but metatheory, onto which Smelser must graft a true specification of causes.

Nevertheless, Smelser's theory is a brilliant attempt to incorporate a wide range of determinants into a systematic interpretation of collective behavior, with attention given to both immediate and distal sources of collective action.

MATHEMATICAL THEORIES OF CROWDS

Mathematics is not a form of magic which can create substance out of the vacuum of an ill-conceived theory. However, there are real advantages to the symbolic formalization of models:

1. *The mathematical theorist must make perfectly explicit all variables and the relationships among them. No verbal haze can obscure the essential postulates of the model.*
2. *Similarly, the theorist must specify assumptions which are necessary for the model to function but which are not part of the model itself. In the area of collective behavior, for example, it is frequently necessary to assume that the group under examination is of constant size, or that it is homogeneously mixed. The need for explication of such assumptions may force the theorist to consider crucial but unexamined aspects of the phenomenon he wishes to explain.*
3. *Once a theory has been translated into mathematical terms, a highly developed set of formal rules can be applied to investigate relationships among the variables. Such investigation can produce subtle and unexpected conclusions. Perhaps the most significant outcome of current mathematical approaches to crowd behavior (such as the existence of a propensity to imitate) can generate striking predictions about aggregates (such as the rapid spread of a behavior through a crowd). Such predictions require no change in the customary behavior patterns of individuals. Rather, they proceed mechanically from the simple fact of large numbers.*

Attempts to apply mathematics to crowd behavior were in evidence as early as 1898, when Boris Sidis proposed a theory of mob energy which filtered down from the mob's leader to his followers. Arbitrarily, Sidis decided that the energy awakened in each follower should be half that emanating from the mob leader, and that the energy awakened by mutual excitation among the followers should for each individual be halved again. The resulting expression for total "energy" predicts growth of that quantity as approximately the square of mob size. Plainly, Sidis' quantitative results must be taken with a grain of salt, though his conclusion agrees in a loose way with the observation that rowdiness of a crowd grows more rapidly than the simple addition of individuals would indicate. Models that are far more sophisticated, from a mathematical standpoint, sometimes make assumptions that are nearly as simple as those of Sidis. In all cases, caution must be exercised in assessing the value of microscopic psychological assumptions on the basis of the success or failure of macroscopic predictions.

Contagion

Processes of contagion have been a favorite topic for mathematical treatment. Contagion, as we have seen, means that a state present in one crowd participant may come to infect another. Social contagion is treated by mathematical theorists as formally similar to the diffusion process in physical science. Rapoport (1963) stated: "The occasional explosive spreads of rumors, fads, and panics, attest to the underlying similarity between social diffusion and other diffusion and chain reaction processes, such as epidemics, the spread of solvents through solutes, crystalization, . . . etc." (p. 497). Social contagion may be treated in terms of models of a similar mathematical type.

Consider a crowd of men at a political rally in which a fight has broken out and appears to be spreading. What features of the situation need to be represented before mathematical analysis of contagions can proceed?

First we must start with a specifiable *population*, a group of persons for whom the analysis is relevant. Each member of the population may be in a number of *states*. For example, a member of the crowd may be violent or peaceful; or he may be somewhere in between, if more than two states are possible. To build a model, we must know whether the population is of constant size or not. Are newcomers being added to the population (a *population source*)? Are some participants leaving (a *population sink*)? We must also know whether the states are *reversible* or *irreversible*. Once a peaceful man becomes violent, does he remain in that state or can he revert to his originally peaceful condition? The infected states may be considered irreversible if the individuals are not expected to recover during the time under consideration. However, in some cases, a participant may recover with immunity; that is, once a man has passed through the violent state, he may recover in such a manner that he cannot again be infected. Some states may be absorbing states which, once entered, will persist for the duration. For example, a participant in a fracas may be knocked out cold. It is necessary to spell out these details before a mathematical representation of the diffusion of violence can be given, but in the very act of specification, attention becomes focused on aspects of crowd behavior that are of general import. Such thinking immediately points to the lack of detail in current formulations of contagion: none of them specifies whether contagion is reversible or irreversible, the variety of states into which members may pass, what types of immunity develop, or the effects of sinks and sources. Yet each of these features, whether treated in a specifically mathematical vein or not, is important to an understanding of the spread of behavior in a crowd. Rapoport, whom we have followed in this analysis, writes (1963, p. 498):

To construct a general model of contagion process, it is necessary to list all the relevant states in which the members of the population may be and also to indicate the transition probabilities from one state to another. The event contributing to the probability of such a transition, typical for a contagion process, is contact between two individuals as a result of which one or both individuals pass into another state. However, it is possible to imagine also "spontaneous" changes of state, for example, from one stage of a disease to the next. Also when two individuals come into contact this may contribute to an increment of a state to which neither of the individuals belongs.

Rashevsky's theory of contagion Rashevsky (1939, 1951) proposed two parallel models of mass contagion based on imitation. His simpler model assumes two classes of

individuals exhibiting mutually exclusive behaviors. Within each class are a group of "actives," defined as those whose probability of engaging in the competing behavior is arbitrarily small, and a group of "passives," whose behavior is determined principally by their propensity to imitate others. Rashevsky notes that, although his model follows an assumption of passive imitation, the same formal relations would hold if the actives were to try to persuade or coerce the passives into a given activity (1951, p. 116).

Rashevsky assumes that the number of actives of each type is constant at values X_0 and Y_0 . The number of passives engaging in each behavior varies with the preponderance of that behavior already existing in the population. Specifically, the time rate of change in the number of passives exhibiting X -type behavior, dX/dt , is directly proportional to the existing number of X 's and negatively proportional to the existing number of Y 's:

$$dX/dt = a_0X_0 + aX - c_0Y_0 - cY$$

It follows from this model that stable configurations of behavior exist only when all the passives have moved to one behavior pattern, X or Y . The behavior of the system is completely determined by its initial condition: if the initial ratio of X to Y exceeds a critical value, the entire passive population become X -converts; if not, they turn to Y .

Once at equilibrium, the system will move only under the influence of outside forces. However, the system is extremely sensitive to such exogenous pressures. For example, a small autonomous change in the number of actives of either type, say, a rise of 100,000 in X_0 , can cause an entire population of 10,000,000 to reverse its predominant attitude or behavior.

In a later, more sophisticated model, Rashevsky assumed a net internal tendency, θ , to exhibit behavior X or Y , positive θ indicating a net tendency to show X , negative θ indicating Y . He assumed θ to be distributed in Laplacean form, symmetrically about 0. That is, he assumed the average tendency of the population to be neutral. The dispersion constant, σ , of the distribution measures the homogeneity of the group, that is, the degree to which individual tendencies cluster around the neutral point. Similarly, Rashevsky assumed that an individual's tendency to engage in X or Y fluctuates over time, again having a Laplacean distribution, with dispersion constant k . Thus, k measures the stability of behavior of individuals over time. Finally, Rashevsky assumed the existence of a tendency to imitate, ψ , which grows as one or another form of behavior gains predominance, but which also "decays" as it grows. That is,

$$d\psi/dt = A(X - Y) - a\psi.$$

Working from these assumptions, Rashevsky obtained a complex differential equation which, though capable of explicit solution, is, as Rapoport (1963) pointed out, probably not capable of empirical verification.

However, the model does yield a set of instructive, and perhaps verifiable, equilibrium conditions. An equilibrium condition is one in which there is no spontaneous tendency for the population to move one way or the other. An equilibrium exists at $X = Y$, $\psi = 0$ (that is, the population exhibits both behaviors in equal proportions, and the net tendency to imitate is 0). This equilibrium can be unsettled by fluctuations in proportions of Z or Y , or by external forces on the system. For small deviations,

the system returns to neutral equilibrium; however, if a certain inequality holds, one form of behavior will become predominant and a new, stable equilibrium will be created. This inequality is

$$N_0 > \frac{a(\sigma + k)}{A\sigma k},$$

where a and A are constants and N_0 is the population size.

Thus, given the individual parameters a , A , σ , and k , N_0 is the smallest crowd which can be swayed to exhibit a predominance of one of the two behaviors in question. A smaller crowd will continue to show both in equal proportions. The margin by which N_0 exceeds $a(\sigma + k)/(A + k)$ reflects the degree of predominance of one behavior over the other. In short, the formula implies that large crowds may be more easily and completely swayed than small ones.

From the same formula, we see that less initial uniformity of the crowd (small σ) requires larger numbers for contagion to occur. We may also deduce the counter-intuitive proposition that the more stable individual behavior is over time (large k), the more readily contagion can occur. (It will be remembered that Rashevsky assumed that the population showed no net tendency toward X or Y ; hence, "homogeneity" and "stability" refer to a tendency toward neutrality. If this restriction is removed, and we hypothesize an asymmetry in the distribution of θ , that is, a net proclivity for one behavior or the other, the above results do not follow. In such a case, as we would expect, equilibrium is most easily attained in the direction of the favored behavior.)

Types of models

Bailey (1957) makes an important distinction between deterministic and stochastic, or probabilistic, models. Deterministic theories attempt to predict the *specific values* which dependent quantities will assume as a result of changes in independent variables, for example, the range of spread of information as a function of time. Stochastic models deal with the *probabilities* that systems will be in given states under given conditions, such as the probability that an item of information will have reached half the population in a certain amount of time.

Among all the phenomena of interest in the social sciences, mass behavior seems most amenable to classical, that is, deterministic, mathematical treatment. This assertion proceeds mainly from the mechanical operation of certain mathematical facts:

1. *For sufficiently large groups, the proportions of members involved in particular behaviors can legitimately be approximated by continuous variables. This permits representation of their rates of change in the form of differential equations, for which an elaborate solution machinery exists.*
2. *According to the "law of large numbers," the importance of statistical fluctuation is reduced as sample size or number of trials grows. Individual deviation from expected behavior patterns may therefore cancel in a large group. Thus, for mass phenomena, deterministic theory may produce satisfactory approximations to reality. Moreover, even for small-number cases where deterministic theories cannot generate predictions correct in every detail, they may serve a heuristic purpose as a starting point for more sophisticated, stochastic treatment.*

The introduction of probabilistic considerations permits prediction of the degree to which contagion will affect small subgroups of the population. As Bailey points out, the assumption of homogeneous mixing, necessary for mathematical manageability, is likely to be true only for such small groups. Our attention is naturally brought to such units, and hence, to stochastic processes.

Bailey's principal example of the superiority of probabilistic models concerns the cyclical nature of epidemics over time. Bailey refers quite specifically to the spread of disease, but we may think in terms of the diffusion of a particular form of behavior—say, the adoption of a fad, spread of the dancing mania (Hecker, 1885), the widening enthusiasm for the Beatles, or the dissemination of hula hoops. Early deterministic work by Soper (1929) attempted to take account of epidemic cycles. However, Soper's model predicted damped oscillation, that is, predicted that recurrent epidemics would become progressively less severe until they died out entirely. Since this prediction is contradicted by fact, it remained for stochastic theory to develop a more accurate model. Bartlett (1957) used "Monte Carlo" (random number) methods on a computer to simulate the epidemic process, successfully describing the cyclical nature of real measles epidemics. An interesting aspect of his model was the specification of a critical size for communities, below which epidemics could not recur. His predicted value of 200,000 tallies well with the observed value of 250,000. Whether valid social analogs to these epidemiological notions of periodic contagion and critical population exist remains to be seen. Such "wave" phenomena as applause or outbursts of anti-Semitism might be profitably explored in this connection.

Models of group size

In the study of mass phenomena, it is important to know how crowds coalesce out of unstructured collectivities. Mathematical models describing the formation and dissolution of small groups within larger aggregates may contribute to our understanding of the patterns along which larger crowds form.

John James (1951, 1953) set this work on empirical ground with his survey of large numbers of freely forming groups in a variety of social situations. James reported the frequencies of appearance of groups of various sizes as they formed spontaneously on streets, in stores, on playgrounds, in public recreation areas, and at work places. He found that groups ranged in size from two to seven, with a mean of about three. The distribution of sizes was J-shaped, with frequency falling as group size grew.

Noting the small size of most groups and the similarity of size distributions in different social settings, James concluded:

1. *Groups formed via face-to-face interaction gravitate to the smallest possible size (two) and the smallest number of possible relationships (one).*
2. *Variables of perception, thinking, and motor ability are more important in determining group size than motivation, space, social situation, or age of participants.*

James (1953) also pointed out that the data fit a negative binomial distribution function, though he had little comment on the theoretical significance of that fact.

Coleman and James (1961) were able to develop a mathematical model to fit James's observations. Theirs is a stochastic model in which group sizes are represented as "states" (a group is in state 2 if it has two members). They developed transi-

tion probabilities from one state to another based on the following assumptions:

1. *Isolated individuals (in state 1) have a constant probability of joining some group. This probability is independent of group size; that is, the "contagion" assumption (that larger groups are more attractive than smaller ones) is explicitly denied. As a consequence of the preceding postulates, the net influx to any group depends solely on the number of isolated individuals in the system.*
2. *Individuals have a constant probability of leaving a group; hence, the rate of departure from a group depends only on the number of people in it.*

This birth-and-death model predicts that, in equilibrium, the distribution of group sizes will follow a "truncated Poisson" form. The prediction was confirmed for 19 of the 23 surveys taken by James. The authors suggest that the equilibrium behavior of an aggregate is determined by the "parameter" na/b , where n is the total number of groups ultimately formed, a is the probability of an individual spontaneously joining a group, and b is the probability of an individual leaving a group. Coleman and James suggested that this model could account for the growth of crowds if a were assumed to be an increasing function of time. (It will be remembered that they denied the proposition that a might be an increasing function of group size.)

The seeming success of the Coleman-James model was shown by White (1962) to be misleading. White demonstrated that no less than seven different sets of assumptions could predict an equilibrium distribution of the truncated Poisson form. Interestingly, one of White's models incorporates a contagion assumption, along with some counterbalancing assumptions. White stated: "Coleman and James erred in inferring from the close fit of their one model to the data that a contagious joining process could be ruled out as a component of any model valid for those data" (p. 167). White suggested that the most parsimonious model which predicts the appropriate equilibrium distribution is one based on a single parameter, γ , which represents the fraction of persons who leave groups and then remain isolated. As γ approaches zero in this model, groups, on the average, become larger and larger, and aggregates approaching crowd proportions begin to form. White's paper thus touches, however briefly, on the problem of relating small-group formation models to models of mass behavior. More important, it illustrates again the pitfalls of basing inferences about the validity of a set of social-psychological assumptions on the success of the aggregate model which those assumptions generate.

SUMMING UP

Where does this review of theoretical approaches to the crowd leave us? What are the main ideas? Starting with Le Bon, there were two main questions. The first was how we are to explain the homogeneity of crowds; the second, how we explain the emergence of uncivilized behavior among crowd participants. Thus, Le Bon concentrated on the transformation of the solitary individual in the crowd toward a condition of being like others, and expressing brutality. Freud accepted Le Bon's descriptions of savagery and homogeneity, but probed more deeply into the underlying psychological processes. The answer, he felt, lay in the relationship between the crowd member and the leader. Turner and Killian (1957), and also Lang and Lang (1961), challenged certain descriptive features of the crowd. In place of the idea of *homogeneity*, Turner observed *differential participation*. Le Bon and Sighele were more concerned with the

end results of a person's participation in the crowd. Turner looked at the way crowd norms and common understandings *emerge* in a fluid, undefined field. Smelser raised rather different questions, concerning himself not with the change in the individual but with the conditions of society that give rise to distinguishable forms of collective episodes. Here the general notion is that of tension or strain that cannot find release through the regular channels of society, and thus erupts in collective outbursts. The particular kind of eruption depends on where people believe the strain exists, and on other conditions, such as the nature of social controls. Mathematical theorists, such as Rashevsky, take a different tack, abstracting macroscopic processes and attempting to fit an equation to account for them. The phenomenon of collective behavior admits of several theoretical foci, and there is no single set of questions that constitutes *the* proper set of questions about the crowd.

Irrationality

One question, deriving from Le Bon, Sighele, and Freud, that is still in the air concerns the assertion that crowds are irrational. It is an issue that requires analysis. First, one may ask, what is meant by rationality? There are at least three criteria: (1) that once a goal is decided on, intelligent and efficient means for its attainment are employed; (2) that the goal itself is an appropriate human goal; and (3) that the actor performs with internal consistency.

Before imputing irrationality, then, certain features of the crowd situation must be kept in mind:

1. The response possibilities open to the crowd, as an aggregate, are sharply limited. However subtly an individual may express himself in private discourse, the crowd as a whole has access to a limited language. It may support assertions with cheers or applause, or react to them with negative expressions (such as booing, jeers, or the absence of applause). (The only possibility for the collective expression of complex linguistic sentiments is to use a linguistic form already known to everyone, such as the "pledge of allegiance" or even a song. Otherwise the expression of the crowd must remain simple and restricted to a few positive or negative expressions. The pledge of allegiance is written for crowd communication. Ritual becomes important for the very reason that the sequence of action is known to all beforehand, and thus can be engaged in simultaneously.) Given only two fundamental modes of response (positive and negative), a person may quite rationally support statements which on closer analysis contain contradictory elements, because he more or less approves of the statements. A qualified response is not possible for an assembly of 30,000 persons.

2. When wholly contradictory assertions are "supported by the crowd," we must ask whether the same individuals in the crowd are responding. Or are different subgroups in the crowd supporting different statements? This hardly represents irrationality, but rather the normal spread of opinion in a group. As long as writers continue to state, "The crowd cheered statement X, and then irrationally supported contradictory statement Y"—without specifying which elements in the crowd lent support to the two statements, and whether they represent identical individuals—we cannot speak of inconsistency.

3. Because of the breakdown of conventional guidelines to behavior, and the resulting planless quality of crowd episodes, persons in a crowd do not find themselves

able to act within the comfortable grooves of convention. Rather the person must often respond quickly to novel situations and contingencies never before encountered. In retrospect, with adequate time for analysis, some of his actions may appear erratic and inefficient, but the luxury of adequate time for planning behavior is not always available to the participant in the crowd.

The emotionality of the crowd has sometimes been taken as an index of its irrationality, but Turner and Killian (1957) correctly argued that emotion and reason are not necessarily mutually exclusive (p. 17):

Emotion and reason are not today regarded as irreconcilables. Emotion may accompany the execution of a well-reasoned plan, and the inadequately-reasoned plan may be accompanied by no arousal of emotions. The rational-irrational dichotomy seems to have two distinct kinds of meanings. Based on external criteria, behavior can be called rational when it is an efficient way of achieving some goal. By this definition much institutional behavior is irrational and much collective behavior is rational. Who can say that the occasional lynching was not for several decades a fairly efficient way of keeping the Negro in a subordinate place? Using internal criteria, behavior is irrational when the individual does not weigh all possible alternatives of which he can be aware in deciding his course of action. By this definition most institutional behavior is irrational, since social norms narrow the range of alternatives which the individual can consider. While each of the major types of collective behavior has its own characteristic ways of so restricting attention within the range of potential alternatives, collective behavior is not different from other types of behavior in this respect.

Violence

In the minds of most early students of crowds, and in the opinion of some contemporary observers, crowds have an affinity for violence and destruction. The mention of crowds brings to mind such phenomena as lynching mobs, pogroms, massacres, brutal race riots, and stampeding panics. Historical records are studded with acts of cruelty against helpless persons at the hands of crowds. While there is no sense in denying that such events do happen, and with fair frequency, a few points of analysis ought to be made.

First, it is obvious that acts of cruelty that are fully equivalent to those resulting from crowds have often been carried out by organized institutions, while still others have been carried out by solitary agents. Institutions, rather than crowds, have destroyed entire cities with aerial bombardment and have put whole populations to death. At the other extreme, individual murderers have carried out their depredations in solitude and secrecy. So the question is not whether violence is ever found in crowds, but rather, whether it is disproportionately represented in crowds, as compared to individual violence, on the one hand, and institutional violence, on the other. An answer to this question is not easy to come by. It would be necessary to define a universe of crowds and to note the proportion of instances in which violence is represented. This would be compared to the proportion of instances of some other social form—say, organized groups—in which violence occurs.

Furthermore, there may be instances in which crowds may inhibit destructiveness among their members. Unfortunately, there can be no record of acts of violence

that are suppressed because of the presence of witnesses, or as a result of the moderating influence of peers. Violence suppressed is invisible; violence manifest provides dramatic data.

The image of the crowd

The stamp of irrationality and depravity which Le Bon fixed on the crowd had such an indelible quality that we sometimes forget that other social analysts saw the crowd as fulfilling constructive social functions. For example, Bagehot (1869), Wallas (1932), Cooley (1909), and Dewey (1930) stressed the liberation of mind that occurred in the collectivity. Karl Marx (1848), in his influential social interpretation, regarded collective uprising, rioting, and mobs in a positive light, and attributed constructive, rational functions to this behavior. The birth of a new society, he believed, depended on crowd activity as its agent of change. The crowd knows what it is doing in pillaging, attacking, and even killing. In enacting the behavior required by historical necessity, Marx saw the crowd as displaying profound rationality. Our own decade has seen collective behavior in the service of a civil rights movement, seeking the enactment of values many enlightened persons desire.

Extremes

Finally, the study of crowd behavior has been dominated by a concern for the more extreme forms of crowd activity—the panic, the hostile mob, the agitated throng. A concern with extreme manifestations is exciting and entertaining, but it yields an unnatural focus, a concern with pathology without a statement of the normal conditions from which to define a pathological condition. The crowd was first presented to psychology in its pathological forms, and this focus has remained fixed for historical rather than scientific reasons. Mass media reinforce this bias. The newspaper reports a rampaging river that overflows its banks, but is little interested in the normal river flow throughout the year. But can flooding be understood without a firm grasp of the most ordinary and normal features of the river's course? It is not possible to understand the full nature of panic unless that understanding is firmly rooted in an understanding of the normal movement of men and women on an ordinary day in the life of the city. The study of crowds will move away from journalism and toward a mature science to the degree that our vision incorporates the normal scene as well as the extraordinary.

THE WATTS RIOT: A CASE STUDY

The civil rights movement of the 1960's was the principal source of collective disturbance in the first half of this decade, at least in the United States. The Watts riot of 1965 was representative of these episodes, and will serve as a case study.

Background

The Watts riot took place in a Negro residential area of Los Angeles during the week following Wednesday, August 11, 1965. The typical inhabitant of Watts rented a small prewar house; in this respect, he was better off than slum dwellers in New York's

Harlem, who often live in cold-water tenement apartments. Other statistics confirm the underprivileged but not rock-bottom status of the Watts Negro: 30 percent of the children in the area came from broken homes; the dropout rate in Watts schools was more than twice the national average; only one-third of the residents had started high school. The majority of the persons living in Watts were migrants from the South, and most were unskilled. Not surprisingly, the Watts unemployment rate was more than triple that of the white community; more than half the Negro families of Los Angeles were on relief, and 20 percent of Negro families in the area earned less than \$3000 a year. Watts had a high crime rate, and there was a long-standing tradition of hatred for the police. Some sources have reported that this negative feeling was fully reciprocated. Among some Los Angeles policemen, a billy club was familiarly known as a "nigger knocker" (*Newsweek*, August 30, 1965).

The riot occurred during an unusually hot period toward the end of the summer; for four days preceding the riot, a heat wave combining temperatures of 90° to 100° and very high humidity had prevailed throughout the area.

The broader context

Mention may be made of a few of the events and trends which observers view as relevant to the causation of the Watts riot. These include the following:

1. Several significant civil rights victories on the national scene had occurred recently; indeed, Negro voter registration in the South was initiated the day on which the riot began. The relevance of this fact is assumed to reside in the discrepancy between national victories and local defeat, between hopes raised by widely advertised programs and disappointment in not experiencing their consequences. For example, President Johnson's antipoverty program had not become active in Los Angeles, in part because the mayor had been unsympathetic to some of its provisions. A recently passed state Fair Housing Act was repealed in 1964 by a public referendum.
2. For at least three years, the Negro revolt had been in full swing, and the civil rights movement with its sit-ins, marches, and other demonstrations had made active resistance conceivable and even fashionable.
3. Rioting had occurred elsewhere, most dramatically in New York and in Rochester the preceding year. Models were therefore available. Some local observers had pointed to Watts as a potential riot scene for several months, on the basis of resentments and bitterness encountered there (*San Francisco Chronicle*, August 16, 1965).

The precipitating event

On Wednesday, August 11, 1965, a white state police officer arrested a young Negro on a drunk driving charge. The suspect resisted, in the presence of a rapidly expanding crowd of spectators. In the face of the crowd's apparent hostility, the officer produced his pistol and called another car to assist him. He then drove away with the young man and with the latter's mother and brother, all of whom he had arrested. The officer forced the suspect into his patrol car in the presence of the assembled witnesses; he allegedly used a nightstick to prod the young man into submission. One member of the crowd later declared, "When that happened, all the people standing around got mad. And I got mad" (*Time*, August 20, 1965).

Phases of the riot

One can distinguish several stages in the formation and development of the Watts riot:

1. Rumors of police brutality circulated among the crowd. The crowd continued to grow after the officers departed, soon reaching an estimated 1500. The first rocks and stones were heaved at passing police cars as well as at other vehicles.
2. Destructiveness became more general and intense, and spread into neighboring streets. The *New York Times* (August 15) reported: "... nobody seems quite sure just when and how it happened—the crowd turned into a mob and rioters began spreading into the surrounding area, breaking windows, looting stores, and going on a general rampage."
3. The next day, young men stood around the streets, discussing the events of the previous evening and speculating about the night to come. Crude homemade bombs were prepared. Anti-white agitators (among them Black Muslims) were presumed to be active.
4. In the evening, full-scale rioting broke out in an expanded area. White persons in the area were attacked, under such slogans as "Here comes Whitey—get him!" and "Kill them!"
5. Rioting continued during the following day, and now covered a 150-block area. Attackers shouted slogans such as "This is for Selma" and "This is for Bogalooosa."
6. The riot involved 10,000 people, including women, older persons, and children, and turned to the looting and burning of white-owned stores; there were shouts of "Burn, baby, burn!"
7. There was some talk of "going where Whitey lives." On the third day, some bands roamed outside the Watts area. Apprehension developed among white residents, and the sale of guns in white neighborhoods increased sharply. The police and National Guard (the latter called out at this juncture to quell the riot) shot at looters. The riot had reached its climax.
8. With Watts occupied by the National Guard, the riot took on a "hit and run" character, with small groups of rioters committing individual acts of destruction. The number of such incidents gradually diminished.
9. The riot left 34 persons dead and 1032 injured. It cost an estimated 40 million dollars in damages, including over 800 gutted or destroyed buildings. It resulted in some 4000 arrests. The riot also drew national attention to a previously little-known Negro ghetto in which 600,000 persons lived in substandard conditions. As a consequence of the unfavorable publicity, federal antipoverty funds were diverted to an improvement of conditions, some employment opportunities were created, and an official study of the cause of the riot was initiated (McCone, 1966).

The Watts riot may be classed with a rash of Negro outbursts that occurred in the summers of 1964 and 1965 in Philadelphia, New York, Rochester, Jersey City, Harlem, and Chicago. These outbursts had a peculiar quality that set them apart from race riots of the past, such as the well-known riots of East Saint Louis (Rudwick, 1964) and the Detroit (Lee and Humphrey, 1943; Shogan and Craig, 1964) and Harlem riots of 1943 (Waskow, 1966). The earlier episodes were true race riots in that segments of

the Negro and white population came into direct, open conflict. There were many injuries, several deaths resulting from brawls, and direct confrontation between Negro and white elements of the community.

But the disturbances of 1964–1965 had a different quality. The Negroes did not directly attack the white population. No bands of white hoodlums made sallies into the Negro neighborhood. The outbursts occurred in the heart of the Negro ghettos, rather than at the boundaries of the Negro-white neighborhoods. The first man attacked in the Philadelphia outbreak of 1964 was a Negro policeman. Race *per se* seemed to be less an issue than poverty.

The phenomenology of crowds

Traditionally, crowd psychology has drawn its inferences from historical settings, from the physical actions of crowds, and from sources only remotely related to collective behavior, such as the mesmerist's parlor and the psychiatric consulting room. The motives of crowd members have in various ways been *indirectly* inferred. This type of approach is, at least sometimes, more plausible than it may at first appear. The events and circumstances that trigger a crowd, for example, should logically be diagnostic of its concerns. So should the slogans that impel people and the actions they are led to take.

However, inferences from such "objective" sources are not only difficult to confirm, but can become unlikeliest and synthetic. Without direct (psychological) data to serve as a check to them, they can produce ghostly caricatures of hypothetical motives. Thus, the crowd member can become dubbed, as he was in Le Bon's day, as infra-human and irrational.

Crowd members have no way of disproving the theorist's adverse characterization, or of appealing against its import, because the same theorist generally contends that it is unthinkable to approach a crowd for information about itself. The arguments for this contention are generally methodological in nature, but they are related to the fact that the conclusions of crowd theory are often also its premises. If we pre-classify a person as devoid of intelligence and restraint, how can we view him as a competent informant? Moreover, if we do force ourselves to interview crowd members (despite such misgivings), would it not be obvious that their responses would be predictably stubborn and confusing? Is it not clear that even an irrational person would hardly oblige us with blatantly derogatory self-characterizations?

Interviewing crowd members presupposes (at least, tentatively) an abandonment of early models of crowd psychology. To the extent that we are willing to listen to demonstrators or rioters discuss their reasons for demonstrating or rioting, and to the extent that we can take their reasons seriously, we lay the groundwork for a less specialized perspective on crowd behavior. Our respondents would inevitably take the view that riots or demonstrations (or at least, *their* riot or demonstration) are a legitimate, rational response to fairly extreme social stimuli. If we consider this view as evidence in our efforts to explain crowd behavior, we reduce the difference between the crowd member and other individuals, who also try to adjust, as best they can, to an imperfect society.

To illustrate this theoretical consequence of phenomenology as a method, we return to a consideration of the Watts riot. We can examine statements made by participants in the riot (and by observers close to them) to various newsmen covering the

event. We can group these statements under appropriate content headings. We can then inquire into the general nature of the explanatory scheme which these headings suggest.

It must be emphasized that the data we shall report here were obtained under battle conditions. They were unsystematically volunteered and unsystematically recorded, and may well have suffered distortions in the service of news value or due to faulty recall. Nevertheless, they serve to provide an indication of how a crowd conceptualizes its own motives. The next section of this chapter will consider some methodological supplements and checks necessary for more formal studies of this same kind.

The phenomenology of the Watts riot

The following summarizes the major groups of psychological explanations furnished by Watts residents for their participation in the riot.

1. *Police brutality.* The Watts riot started with an incident involving a police officer. But long after the first evening, the police continued to be invoked as the chief cause of rioting. It seemed as if the police had come to represent all manner of humiliation and mistreatment suffered at the hands of white society. For example, one young man who had participated in the burning of a supermarket ventured the opinion that "the riots will continue because I, as a Negro, am immediately considered a criminal by the police, and if I have a pretty women with me, she's a tramp—even if she's my wife or mother." An unemployed man, who admitted having repeatedly thrown rocks at the police officers, declared (*San Francisco Chronicle*, August 18, 1965):

Maybe the people of Beverly Hills would riot too if they spent most of their life with a cop's club in their face. Or if they had to get out of an automobile with their hands over their heads to be questioned for doing nothing at all. We're not safe from police brutality even in our own home.

The various rumors circulating about the incident that triggered the riot illustrate the extent of antipolice sentiment. Thus, one young rioter recalled that "the police struck a lady—and she was pregnant—and they broke her nose" (*San Francisco Chronicle*, August 16, 1965). A Negro mother, standing outside her Watts residence with "eyes bright with anger," related, "I heard they beat an old woman over there—they police beat her half to death." She added: "Lord knows, our people are sick in their hearts with this brutality. You can't sit and take it forever, can you?" (*San Francisco Sunday Chronicle*, August 15, 1965).

2. *Retaliation against white exploitation* was the motive implicit in most of the spontaneous remarks made by rioters in the course of their destructive activities, and probably the most prevalently voiced rationale. Stores with windows carrying signs that identified their owners as "Negro," "Soul Brother," or "Blood Brother" were generally not looted or burned (*Los Angeles Sentinel*, August 19, 1965), and among white-owned stores, the first targets were reportedly "businesses whose owners had a reputation for gouging Negroes or for foreclosing mortgages" (*San Francisco Chronicle*, August 21, 1965). James Farmer pointed out that, in the course of looting, "the first thing they [the rioters] went for is the credit records" (*San Francisco Chronicle*, September 3,

1965). A female resident of Watts explained (*San Francisco Chronicle*, September 3, 1965):

They're fed up with these whites cheating them out of their money—you know it ain't easy, the people like us to get jobs, and we got to work hard for everything we get. Why should we let them cheat us out of what little we got? Let 'em lose a little bit now. Ain't it about time?

The rioters, in discussing the white Watts merchants, frequently alleged that the commodities offered for sale in the ghetto were rejects from outlets in white areas, including stale food. These items, according to Watts residents, were generally sold at much higher prices than elsewhere. Considerable resentment against white landlords was also voiced. One man declared while he watched a burning building: "I wouldn't give a goddam if they burned my house down as long as I could get this. Mine ain't worth a damn nohow. He's the one with everything to lose" (*Life*, August 27, 1965). In general, the mood prevailing among the spectators and among those engaged in the destruction of white property was described as one of joyful vindictiveness. The antiwhite "warfare" aspect of the proceedings is also pointed up in the fact that Negro nonparticipants were frequently informed that their inactivity implied Uncle Tomism or partiality to "The Man."

3. *Unemployment* was frequently mentioned as a cause of the riot. Evidence of this is provided by Governor Brown's complaint that, when he asked people for the reasons behind the destructiveness, they "gave me no clues to the reasons, although they did describe the economic problems" (*San Francisco Call Bulletin*, August 20, 1965). A speech by Martin Luther King in Watts was interrupted with the shout, "'I had a dream, I had a dream'—hell, we don't need no damn dreams. We want jobs" (*Newsweek*, August 30, 1965). Many Watts residents indicated that they believed unemployment to have been the chief cause of the riot. The *New York Times* (August 17, 1965) quoted a young Watts mechanic as proclaiming, "We've come to life. You get me a job and pay me—we're satisfied. If you don't—well, we're not going back to slavery." A woman explained that "This wasn't no race riot. It was a riot between the unemployed and the employed. We are tired of being shelved and being told we don't want to work" (*Time*, August 27, 1965).

4. *Hopelessness*, the feeling that one could not actively determine one's fate, was mentioned by some as a contributing factor in the riot. A young mother of four put the case very eloquently when she told Governor Brown (*San Francisco Call Bulletin*, August 20, 1965):

I feel buried here in Watts with nothing to look forward to . . . Everyone has a deep feeling of lostness. There's no hope out here in Watts, we're stranded. We want something to look forward to. It's no fun cashing a county welfare check every week.

A number of residents of Watts discussed the hopes that they had had and the failures that they had experienced. A young man who had migrated to Los Angeles from Texas with his wife and three children explained that he was working as a dishwasher. "People come here looking to better themselves," he said, but "it

ain't here for you." A female evangelist interviewed by the same reporter indicated that "when the government says it's going to help, but then there ain't nothing, it's disheartening to people" (*New York Times*, August 26, 1965). "Author Louis Lomax has been quoted as writing that 'Negroes in Watts have a pathology of failure—they failed in the South and failed to find the promised land in Los Angeles'" (*New York Times*, March 20, 1966).

5. *Anonymity* appeared to be a condition which for some was dispelled by the riot. The following encounter between the governor and a young Watts citizen illustrates this premise. He bluntly asked Brown: "Had you planned to come down here before this?" "No, frankly, I hadn't," Brown replied (*San Francisco Call Bulletin*, August 20, 1965). Another resident declared (*San Francisco Chronicle*, August 18, 1965):

I don't believe in burning, stealing, or killing, but I can see why the boys did what they did. They just wanted to be noticed, to let the world know the seriousness of their state in life.

Rioters perceived that the episode would achieve collective and individual visibility. The former was exemplified by the statement of an old man who said, "the only way we can get anybody to listen to us is to start a riot." The latter is implicit in the claim of an unemployed young man to the effect that "Negroes are ready to die for respect" (*Newsweek*, August 30, 1965).

6. *Lack of identity* was also diminished by the riot, according to some participants and observers. A Negro graduate student who had returned to Watts at the time of the riot told a former teacher (*Life*, August 27, 1965):

As a riot, it was a masterful performance. I sensed a change here now, a buzz, and it tickles. For the first time people in Watts feel a real pride in being black. I remember, when I first went to Whittier, I worried that if I didn't make it there, if I was rejected, I wouldn't have a place to go back to. Now I can say: "I'm from Watts."

James Farmer asked one young rioter how he felt, and the boy replied, "Baby, I feel like a man." Another told him, "Man, this is instant renewal" (*San Francisco Sunday Chronicle*, September 3, 1965). A Negro psychiatrist described the rioters as having developed "a feeling of potency." He said that "they feel the whole world is watching now. And out of the violence, no matter how wrong the acts were, they have developed a sense of pride" (*Time*, August 27, 1965).

Implications for theory

The Watts rioters tell us in their comments that they see the riot as an act of retaliation against the humiliations to which they and their race have been subjected; they also view the riot as symbolizing their refusal to continue to submit to second-class citizenship, with no recourse or autonomy. Insofar as a riot may be said to have an ideology, these two statements would comprise the perceived "objectives" of the Watts explosion. But is this self-characterization of motives an adequate and sufficient explanation? Assuming the rioters are honest in their introspections and sincere in their comments, are these the concerns which are *really* reflected in rioting, in the same

sense as they might be in a civil rights demonstration? To provide a negative answer to this question does not require a denial of legitimacy to the grievances and resentments of our informants. First, it is obvious that, although a riot embodies grievances, it is not an effort to arrive at a remedy, as is a social movement. It is, rather, a simple *expression* of grievance, in which the premium is on emphasizing the problem, rather than on solving it. Whereas social movements, as we shall see, imply discouragement with institutional remedies, riots indicate that a group has given up on social movements as well as on institutions. One would expect a riot, in other words, when the conditions for a solution effort exist, but no movement has arisen in response to them. In the case of Watts, a boycott of white stores might thus have been organized, but there was "no one—no organization—with sufficient influence to organize one." A Watts woman who had in the past been politically active, but had given up, explained: "when the police brutalize us and the merchants misuse us, there's nobody we can go to to talk about it" (*San Francisco Chronicle*, August 21, 1965). This unavailability of channels for the expression of grievances leaves the riot as a last resort.

Second, it is hard to separate the feelings that *emerge* in a riot from the motives that *originate* it. The first phase of the Watts riot was set off by indignation and anger that was primarily situational in origin, although it benefited from long-standing resentment against the police as the symbol of discrimination and white power. This feeling may have been magnified by excitement, and produced the rather diffuse second phase, in which ideological considerations were probably least relevant. With the advent of the third phase (the "War on Whitey"), general resentments and frustrations could again come to the fore.

Third, one must make a distinction between *initiating motives* and *sustaining mechanisms*. Although one may argue that feelings of resentment, helplessness, self-doubt, hopelessness, and rage are necessary prerequisites for rioting, the view of the riot shows that they are hardly sufficient. Factors such as police reaction, prior riots, agitators, and even the weather can create a "climate" within which such resentments are shaped into mob action. In a riot, grievances enhance the readiness to participate. They increase the likelihood that the precipitating incident will be interpreted as a personal affront; they increase the propensity for action, when the inducement arises. The riot spectator is a potential participant not only because of "excitement" or other blind emotional reactions, but because he senses in others a display of susceptibilities similar to his own.

To the extent that this view of motivation to crowd behavior is tenable, the crowd member can tell us in interviews of the relevant long-term motives he shares with other underprivileged individuals. His shorter-term motives and the mechanisms that evoke them must be obtained through systematic observations of crowd behavior.

METHODS IN THE STUDY OF CROWDS

Somewhere near the beginning of a chapter on collective behavior it is customary to issue a stern warning on the difficulties that the field presents for scientific study, and to account on these grounds for the relative scarcity of scientific inquiry on this topic. One difficulty is that episodes do not always occur at a convenient time and place, and this unpredictability of collective behavior makes systematic firsthand observation difficult. Nor is it easy to generate collective episodes in the laboratory or field for

purposes of investigation. Often investigators must rely on newspaper reports, historical records, newsreels, videotapes, and personal narratives. Yet a number of approaches have evolved which, used in combination, ought to lead to a firm empirical grounding.

SURVEY RESEARCH

Survey techniques may be employed in the study of collective episodes. The most famous use of survey procedures was undertaken by Hadley Cantril (1940). His study focused on a major panic that engulfed the Eastern portion of the United States on October 30, 1938. The occasion for this hysteria was a dramatization of H. G. Wells's *War of the Worlds*, presented as a Halloween feature by the "Mercury Theater of the Air." The aim of Cantril's research was to determine why thousands of Americans had come to conclude that they were being invaded from outer space, and why other members of the same audience were protected from this error.

Cantril tells us that because the social phenomenon in question was so complex, several methods were used to seek out different answers and the results obtained by different methods were compared. Two types of surveys were included in the research program. One was a series of intensive, detailed retrospective interviews of 100 persons who had come to believe in a Martian conquest of earth and of 35 listeners who had identified the play as a play. Other surveys considered were public opinion polls that covered a nationwide adult sample (supplemented by a special report on the reaction of children). The study also relied on content analyses of news items and of mail received by radio stations.

Among the aspects of the panic covered in Cantril's study were the characteristics of the broadcast that enhanced its credibility, the contributing influences of the historical setting (such as listeners' experiences with the Great Depression, their perception of the state of science, and their awareness of the threat of war in Europe), and the reinforcing or calming effect of other listeners.

In line with the aims of the study, Cantril's principal findings related to the frame of mind and psychological strategy that created personal susceptibility to *panic*. Outstanding among the demographic factors that differentiated more suggestible persons from less vulnerable ones was their level of education. Relatively educated people were able to avoid error by resorting to relevant information, and by bringing to bear a salutary degree of skepticism (causing them to "check" their sources of information). Psychologically, the mechanism leading to acceptance of the invasion as real seemed to be a combination of an acute need to "make sense" of the situation and either (1) a rigid frame of reference that prestructured a panic-producing interpretation or (2) the absence of any frame of reference at all.

Objective survey technique, with its emphasis on specifiable sampling procedures, helps correct gross inaccuracies reported in the press. Thus, whereas a newspaper reported that in response to a severe London smog "one of the world's biggest cities experienced a near mass panic," a sample survey revealed that only one percent of the respondents reported themselves as having panicked (Killian, 1956, pp. 10-11).

SECONDARY SOURCES

Views on techniques for forming an energizing crowd are to be found in the writings of revolutionaries (Lenin, 1902; Mao, 1938) and others who have made extensive use of mass action as part of their social program. Recently, Oppenheimer and Lakey

(1965) published a set of instructions for causing collective disturbance. One may also examine documents distributed by the agents of social control. Police and militia manuals (Bellows, 1920) are an important source of information about current beliefs and practices of those who deal most directly with crowds and mobs. Such documents preceded Le Bon. In 1884, E. L. Molineux wrote on "Riots and their Suppression," stressing particularly that "in its incipient stage a riot can readily be quelled if met boldly and resisted at once with energy and determination."

The International Association of Chiefs of Police (1963) recommends the following procedures in the control of hostile crowds (in italics, we have added a few phrases pointing up the relevance of the techniques to issues discussed in the chapter):

1. If the crowd is still collecting, he [the police officer] can make a quick determination of the facts and take the involved parties into custody. This can sharply cut down the size of the crowd and prevent an incident from getting out of hand. [*crowd crystals, precipitating incident, rates of formation*]
2. If a mob has already formed, call for reinforcements. Here a show of force is necessary, but not the use of force. Tension in a mob is usually highest at a point front and center. Look for the troublemakers—the most excited individuals. Extricate these individuals. [*salience of agencies of social control, structural features of the crowd, differential participation*]
3. A public address system can be a great help in dispersing a mob. The blare of the speaker, reinforced by a tone of authority, will catch and hold individual attention and turn it away from the excitable influences in the mob. [*disrupting polarization on leader, salience of agencies of social control, competing suggestions*]
4. A police cordon around a dangerous area will keep curiosity seekers out and thus prevent them from being infected by mob psychosis. [*spatial character of the crowd, restricting contagion by physical separation of crowd from others*]

Further suggestions (International Association . . . , 1963) include "fragmentizing the crowd into small isolated groups," on the grounds that this will impede the effects of contagion within the assemblage, and infusing the crowd with plainclothesmen who introduce competing slogans and moods, thus preventing the development of crowd unity (Trivers, 1965).

Westley (1957) examined police manuals and interviewed law enforcement officers, drawing conclusions relevant to theories of crowd formation and control. He pointed out that police are taught (1) to prevent crowds from polarizing on a leader or on any other focus of attention, (2) to remove the leaders of the crowd, and (3) to destroy the sense of anonymity and unanimity among members of the crowd. Such tactics highlight the importance of leadership and a sense of shared opposition in the development of hostile crowds.

PROJECTIVE DEVICES

Killian (1956) has suggested that the use of projective techniques may be a valuable method of learning the motives, feelings, and perceptions evoked by crowds. An informal study was performed at Harvard University using a projective format. Five photographs of crowds were interspersed with five TAT pictures of individuals, and subjects were given the standard TAT instructions for the set. Crowd features spontaneously mentioned by the subjects were size, density, movement, polarization,

and how closely related the members of the crowd seemed. Subjects frequently pointed out subgroups in the crowd. Subjects tended to treat the crowd pictures as portraying actual historical occurrences, and were intent on placing the crowds in terms of time, space, nationality, and social class. They did not do this for TAT cards showing individuals. Projective devices constitute a convenient method for uncovering underlying attitudes which may, in the long run, be related to a subject's actual participation in mass events.

EXPERIMENTAL APPROACHES TO COLLECTIVE BEHAVIOR

Three distinct types of experimental research are relevant to the study of collective behavior. First, general experimental literature can be applied to the analysis of collective behavior. Second, crowd behavior can be simulated in the laboratory and subjected to experimental study. Third, field experiments can be conducted on natural crowd formations.

Application of general experimental literature

Experiments from many domains of social psychology can be brought to bear on the analysis of crowds. Typically, the findings are incidental to the study's main concern, but shed light obliquely on collective behavior. For example, Wallach, Kogan, and Bem (1962) noted that under specified conditions individuals in a group engaged in greater risk taking than they would have in isolation. The mechanism of diffusion of responsibility, cited as an important cause of risk taking, may help to account for the injudicious and risky actions attributed to some crowds. Asch (1951), while mainly interested in the individual's conformity to group norms on a perceptual task, pointed out that background group support leads to the emergence of derision, badinage, and disdain for a lone individual deviating from the group. Apparently, group support lends the individual a sense of strength and a willingness to engage in attack. Further evidence for this comes from a study by Milgram (1964) in which subjects were induced by a group to inflict punishment on another person that was well beyond the level of punishment chosen by the individual in the absence of social pressure.

Obviously, it is impossible to list all experiments relevant to understanding collective behavior. Virtually any examination in the laboratory of processes of social influence or group action has at least a modicum of relevance to the behavior of those larger, unformed groups we term crowds. One final area of study should be mentioned because it is suggestive of basic processes operating in crowd behavior. Grosser, Polansky, and Lippit (1951) demonstrated that children could be led by imitation to perform antisocial behavior they would not otherwise perform. Recently, experimental work by Bandura and Walters (1963) has indicated the importance of a model in stimulating aggressive behavior in an individual. This suggests the possibility of one aggressive individual in a crowd serving as a model for other crowd participants, who come to imitate his behavior. Many other laboratory experiments could be devised in a way that would shed light on crowd behavior. For example, the consequences of *anonymity* for the release of aggression, risk taking, and the expression of antisocial impulses can readily be studied by the use of masks, or by the study of social behavior that takes place in darkness.

Simulation of crowd behavior

The favorite haven of the social psychologist is the one-way observation room, where conditions can be controlled and effects noted and precisely observed. But it is not easy to fit a cheering multitude into a laboratory. Even if a sufficiently large number of persons could be assembled under one roof, it is not at all clear that they would represent a crowd truly worth studying. For the conditions that give rise to authentic collective episodes are not easily reproduced. They may depend on long years of frustration and deprivation that no experimenter would willingly inflict on his subjects. Moreover, certain forms of collective behavior, such as panic and riot, contain an element of danger to which subjects cannot legitimately be exposed. Finally, the subjects' knowledge that an experimental authority is directing events tends to run counter to the spontaneous and planless quality of much collective behavior.

Despite these limitations, several attempts to simulate crowd behavior in the laboratory have been made. In a well-known study, Meier, Mennenga, and Stoltz (1941) attempted to recreate the atmosphere of a mob under experimental conditions. Through a series of "news dispatches," students were informed that thousands of citizens were storming the local jail in order to take vengeance against an alleged kidnapper. The investigators wished to uncover the motives and composition of those who would join the mob. Questionnaires were distributed to students at the "height of excitement." Twelve percent indicated a desire to join the mob; 23 percent wished to observe the mob; 29 percent indicated they would have gone with the intention of deterring the mob from lynching victims; and 35 percent stated they would stay away entirely. Only the duller students, it was found, indicated a readiness to join the mob. Did the intelligent ones see through the experimenters' hoax? Is a written statement of intention equivalent to the actual mode of response under conditions of crowd excitement? Do real mobs fill out questionnaires en route to lynchings? What bearing do these highly irregular and artificial components have on our interpretation of the findings? All these questions need to be answered before the exact relevance of this study to crowd behavior can be assessed.

The study of panic is the one area of collective behavior in which a discernible experimental tradition has emerged. This is due not only to the inherently dramatic qualities of panic, but also to the fact that the conditions which give rise to it can be created instantaneously. Panic depends on a set of spatial conditions, but requires no long-standing events in time. In contrast to many other forms of collective behavior, panic is ahistorical, and thus can be accommodated to the experimenter's hourly appointment schedule.

In an early study, French (1944) created an artificial crisis situation for organized and unorganized groups. Groups were placed in a locked room and the subjects were led to believe the building was on fire (smoke poured under the door and fire-engine bells sounded). No panic developed, but the organized groups tended to react with greater uniformity than the unorganized ones.

There is a problem with this research, however, in that it is generally held that the essence of panic is competition for a scarce resource (Brown, 1954; Smelser, 1963). The resource may be the exit through a narrow corridor when the theater catches on fire, a lifeboat when a ship is sinking, or transforming unstable currency into gold as inflation eats away at the value of one's savings. French's experiment

could not be expected to lead to panic because there was no clear competition for a scarce resource.

Alexander Mintz's study (1951) comes closer to this requirement. A number of subjects stood around a bottle with a fairly narrow neck. Each subject held onto a string and each string was attached to an aluminum cone in the bottle. If one cone was withdrawn from the bottle at a time, there was no jamming at the narrow neck of the bottle. However, if more than one cone was withdrawn simultaneously, a jam occurred. Mintz varied a number of factors to study under what conditions jams would occur. The apparatus served as an analog for the classical jam at a theater exit when a fire breaks out. The structure of rewards and punishments (in the form of small fines and rewards) affected the number of jams, as did the cooperative or competitive sets of the subjects. In certain experimental conditions, water slowly rose in the bottles, and subjects paid fines and punishments according to the amount of their aluminum cone that got wet. Mintz concluded that the reward structure of the situation, and whether the subjects had a competitive or cooperative set, were more important than emotional contagion in determining whether or not jams occurred. He denied outright that intense fear or emotional excitement caused nonadaptive group behavior.

There is no really satisfactory experiment on collective behavior. The best is still that of Mintz, but it stands in relation to actual panic as the game of Monopoly does to high finance.

Deutsch (1949) labeled a situation of the type used by Mintz as one in which subjects are *contriently* interdependent. The use of an escape route by one person reduces the chance that the remaining persons will be able to escape. Moreover, simultaneous attempts to use the escape path reduce its effectiveness. Kelley *et al.* (1965) pointed out several other limitations of the Mintz experiments. The small monetary rewards used (ranging from 10 to 25 cents, and fines ranging from 1 to 10 cents) cannot be considered to test the effects of danger of the sort that occurs in a theater fire. To remedy this deficiency, Kelley *et al.* attempted to place subjects in a position of genuine fear by threatening them with electric shock.

Subjects were seated in separate booths with electrodes attached to two fingers. Before each subject were lights indicating his own position with regard to the danger situation and the position of the other subjects. By making a simple response (depressing a switch) the person could attempt to escape. This escape response was communicated to the other subjects by means of the signal lights. Only one subject could depress his escape switch at a time, but the escape mechanism required a full three seconds to operate. If more than one subject attempted to depress the escape switch, it failed to operate. Thus, a bottleneck situation comparable to that developed by Mintz was created. As the basic dependent variable, Kelley used the percentage of persons who succeeded in escaping during a standard time period.

Kelley and his associates studied the effect of a number of variables on this dependent measure, including the size of the escape crowd, the severity of the threat, and the availability of confidence responses. The percentage of successful escapes declined with the increasing severity of the threat, a result which makes good sense when compared to crises in the larger world. The availability of confidence responses, that is, a sign on the part of one or more member that he was willing to wait for others to escape, increased the number of successful escapes and reduced the number of traffic jams.

Kelley's situation differs from real-life panics in a number of important respects. The overall laboratory context assures the subject that a painful shock is the most severe consequence of not escaping. Further, jamming itself has no aversive quality, as it does in a real panic where frequently many people are killed by jamming and the accompanying body crush. Technically, Kelley's explanation deals with avoidance of a noxious stimulus rather than escape from one, while in real-life panics both avoidance and escape elements are often present.

The most significant contribution of Kelley's research is the theoretical notion of staggering of responses and the suggestion of techniques for creating a distribution of responses. Kelley argued that the distribution of attitudes toward the escape situation is the critical factor in the performance of a group of subjects. When all subjects have the same tendency to simultaneous escape (that is, when the distribution of responses is concentrated at the end of the attitude continuum that reflects high concern and feelings of urgency about escape), dire consequences may follow. One technique for creating a spread in the distribution of responses is the introduction of a confidence response by having one or a number of subjects indicate a willingness to wait for others to go first. This was found to have a dramatic effect in establishing an orderly escape procedure.

Field experimentation

The artificial quality of laboratory studies can be eliminated by carrying out studies in natural settings. At the same time, one can retain the advantage of manipulating experimental variables. Sherif and Sherif (1953) report an unusual study that falls somewhere between the experimental study of small-group processes and the observation of spontaneously emerging collective behavior. Twenty previously unacquainted boys from homogeneous backgrounds were brought together at summer camp. The boys were divided into two groups and an effort was made to develop high *esprit de corps* within each of the groups. Once a sense of ingroup solidarity had developed, the groups engaged in competitive tasks. Intergroup animosity developed in the form of derogatory slogans, raids on rival camps, negative stereotypes, and even a desire for complete segregation. Finally, the investigators were able to remove intergroup tension by means of cooperative and functionally dependent tasks, such as fixing a damaged water tank that supplied the whole camp and raising funds for a favorite movie.

The implication of this study is that hostility between rival factions in society can be reduced if the groups can be brought together to work for common ends. Mere contact between groups does not suffice to produce social harmony. The contact situation must have four characteristics if hostility between groups is to be reduced: the groups must (1) possess equal status, (2) seek common goals, (3) cooperatively depend on each other, and (4) interact with the positive support of authorities, law, or customer (Allport, 1954). Each of these criteria was met in Sherif's study.

Other techniques for studying crowd formation and functioning

Psychologists have been singularly unimaginative in devising methods to study collective behavior. In this regard, persons outside psychology have a good deal to offer (see p. 531). The classic argument against the possible study of collective episodes

is that they occur unpredictably. But the investigator can go a long way toward overcoming this difficulty.

One possibility is to use the stimulus of a crowd itself as a springboard to the study of crowd formation. Here either natural crowds or synthetic ones could be observed, and from an aerial perspective one could note the effect of this stimulus on others who were not part of the crowd. A simple recording, of good quality, of crowd noise could be activated in a downtown area, and the rate of aggregation could be observed. One could note how many people are drawn to the crowd in a quickened pace, and how many turn away from the source of crowd stimulus. In all such observation, permanent photographic records, preferably obtained from an aerial perspective, are desirable.

Any suggestion of new methods in the study of collective behavior must mention the possibility of simulating crowds with computers, the application of advanced telemetric devices (both as a means of studying crowd movement and of studying physiological reactions of crowd participants), and the application of aerial photography and videotape recording. While past students of the crowd have had to rely on secondhand, verbal accounts of crowd episodes, news coverage of collective outbursts now provides an extensive file of primary data in the form of videotape recordings readily available to investigators and subject to systematic analysis.

Davis (1964) has suggested that, in view of the inherent difficulties of studying collective episodes, the next step ought to be the creation of a truly comparative file of personal recollection, historical accounts, and survey data on collective episodes, modeled after the Human Relations Area Files. Using a technique parallel to the cross-cultural method, one could formulate hypotheses about crowd episodes and, as far as possible, test them with reference to a large quantity of carefully categorized material.

Mock crowds have been used for training persons in the tactics of nonviolent resistance (Oppenheimer and Lakey, 1965), and they may also serve some investigatory purposes.

In the end, there is no substitute for direct observation and measurement of authentic crowd behavior. A field that consists only of scholars contradicting each other from the armchair can easily degenerate into sterile scholasticism. The most important need in the study of crowds is to get the main questions off the debating rostrum and move them to a level at which measurement, controlled observation, and imaginative experiment can begin to play some part in choosing among competing views.

II. SOCIAL MOVEMENTS

Social movements are forms of collective behavior which *best* fit the criterion of aiming at change in the world, and *least* qualify as amorphous or unorganized. A social movement is a spontaneous large group constituted in support of a set of purposes or beliefs that are "shared" by the members. Psychologically defined, a social movement

"represents an effort by a large number of people to solve collectively a problem that they feel they have in common" (Toch, 1965, p. 5). These efforts tend to occur in the form of social movements because respectable society offers no redress or solution to the dominant concerns of the individuals involved.

THE SCOPE OF THE FIELD

The area of social movements includes groups varying along every conceivable dimension. Some movements are scholarly groups, with tightly reasoned platforms, while others are pure manifestations of enthusiasm, with emotionally charged premises; some movements are meticulously organized, with carefully defined titles and roles, but others are models of pure democracy or anarchy; some movements are localized, while others are geographically diffuse; some are evanescent, while others outlive the institutions in the pale of which they exist.

Most important, some social movements may be classed as relatively trivial human foibles, while others are the harbingers of a new age. In practice, the distinction may not be obvious. A small, motley group of admirers of an itinerant heretical rabbi, for instance, could hardly be characterized, at the time when it was active, as the nucleus of an expanding movement which would eventually cover the Western world; a few emigrants conspiring to confirm the views of a renegade economist might never be viewed as the vanguard of revolutions to take place in their own and other countries; a few unemployed veterans congregating to listen to hysterical speeches by an illiterate corporal might not look like the potential destroyers of their generation.

The ultimate success of social movements does not depend on their size or organization, or the quality of their leadership, or the sophistication of their views. It depends, rather, on the extent to which they successfully express the feelings, resentments, worries, fears, concerns, and hopes of large numbers of people, and the degree to which these movements can be viewed as vehicles for the solution of widespread problems.

Some movements respond to the desire for physical survival or the aspiration toward a more decent, dignified existence. Other social movements embody national aspirations or the desire for collective identity. Still others respond to the need for emotional outlets, or to frustration with the sterility of existence, or to disgust with boredom, aimlessness, and loneliness. Others provide explanatory formulas or furnish scapegoats to persons who have no means of explaining increasing complexity or reconciling themselves to the apparently senseless vagaries of unkind fate. Social movements can also solve a variety of personal problems, ranging from addictive habits to emotional and spiritual crises.

And social movements vary because human problems vary. The distinctive character of each movement is a function of the social deficits which inspire it. Its success is dependent on its appeal to those whose concerns it claims to represent.

"RATIONAL" AND "IRRATIONAL" SOCIAL MOVEMENTS

Collective behavior as a field of inquiry originated in a concern with ostensibly unlawful and definitely unwelcome social phenomena, with "curiosities and monstrosities" in an otherwise rational world. Early systematic accounts sometimes even equated

collective behavior with mental disorder (Mackay, 1841; Martin, 1920; Strecker, 1940).

In the early study of social movements, attention was concentrated on instances in which supposedly weak-minded and gullible persons fall prey to the transparently Machiavellian manipulations of avaricious, lascivious, or psychotic leaders. This orientation may partially account for the relative unpopularity of social movements as a psychological content area today. One reason is that social psychology has shifted from an irrationalist to a cognitive view of social phenomena (Krech, Crutchfield, and Ballachey, 1962); moreover, the line between "normality" and "abnormality" is increasingly viewed as a somewhat arbitrary value judgment (Frank, 1961, Szasz, 1961).

"Crackpot" movements are generally distinguished from "rational" or "non-crackpot" movements on the basis of several criteria. The most questionable of these is the assumption that, if a movement's ideology is extremely deviant from conventional norms, membership must be a symptom of maladjustment. Thus, the *New York Times* (November 8, 1962) tells us that Muslim prisoners in the New Jersey State Prison had "been under observation for two years by a prison psychologist"; another instance of clinical scrutiny is Lincoln Rockwell, leader of the American Nazi Party, who was subjected to a sanity hearing after a psychiatrist testified that "he read Rockwell's party literature for three hours and thought the writer probably was of 'unsound mind'" (*Washington Post*, July 28, 1960). Members of deviant movements frequently complain of encounters with the healing profession in which their membership is traced to mental disease. *Awake*, the official publication of the Watchtower Society, laments that "among the questions recently asked one of Jehovah's Witnesses (by a psychiatrist) were 'Why did you become one of Jehovah's Witnesses? What was your childhood like?' . . ." (March 8, 1960); in similar fashion, a member of a right-wing movement asserts (in a song to be sung to "Turkey in the Straw," *Common Sense*, May 1, 1962) that

... it's obvious to a doctor,
And a social worker too,
That dislike of things collective,
Means your mind ain't running true . . .

Although apparently the most prevalent, and certainly the most general, criterion used to label a movement "crackpot" is the deviance of the group's ideology from the spirit of the times, several more specific and concrete diagnostic indices are also employed. For example, any movement whose members display unusual or "private" styles of expression or modes of overt behavior invites classification as "crackpot." In observing Father Divine's "heavens," for instance, an observer might deduce the "irrational" character of the movement from the fact that members carried names such as "Glorious Illumination" and "Fineness Fidelity," and the fact that Father made speeches containing neologisms such as "Incarnatable" and "Repersonifiable" (Cantril and Sherif, 1938). Even minor details such as attire (wearing beards or Roman-style togas, for instance) or dietary habits (such as exclusive ingestion of fruits and nuts) could help to produce a "crackpot" classification. One dubious implication is that the adoption of prevailing behavioral norms denotes sanity, and that, for instance, the private language of "respectable" subgroups (such as social scientists) is different in kind from that of, say, a "fringe" religious group.

A movement also tends to be viewed as irrational if its members or leaders disproportionately characterize their role in society or seem to exaggerate their own importance. Father Divine's claim to deity, for instance, would be considered a mark of eccentricity, as was Homer Tomlinson's claim to prospective victory in his 1960 Presidential campaign against Richard Nixon and John F. Kennedy (*The Church of God*, October and November, 1960). A related index for the label "crackpot" is that of drastic oversimplification of reality. Thus the Townsend Plan was condemned as a crank scheme by economists because of its overly primitive view of the economic system (Cantril, 1940, p. 172), and the irrationality of "conspiracy-centered" movements is deduced from their centralized conception of social causation (Toch, 1965, p. 52).

Charles Morris points out that the value of correspondence to reality is characteristic of scientific discourse, but that there exist other discourses, such as the "religious" one, whose adequacy "depends upon whether or not it appeals to given individuals in a given cultural milieu as a way in which their lives can be satisfactorily focused and directed" (Morris, 1946, p. 148). Clearly, the application of the criterion "satisfactory focus to life" may qualify premises that involve flagrant distortions of reality, especially when reality is psychologically intolerable. Thus, for example, the synthetic, protective haven offered by Father Divine from the miseries of life in mid-Depression Harlem necessarily required tampering with reality, but it did provide a means of weathering the storm. To equate rationality with realism may in itself become an "irrational" criterion, because it sets up psychologically unrealistic demands. It may also impose epistemological assumptions of a science-centered age on a group whose principal values and premises may lie elsewhere, as in mysticism or subjective experience.

This observation relates to another criterion of irrationality, that which condemns private, inaccessible, or "unusual" sources of information. The judgment "crackpot" in this sense would apply to beliefs such as those embodied in a tract starting with the sentence, "The Messenger, John the Baptist, came to me at my home at 441 Rural Street, Port Huron, Michigan, January 6, 1930, at 12:45 A.M., and was with me until 2:50 A.M." The movement accepting this document as authority would be viewed as placing faith in a source not meeting criteria of public verifiability and trustworthiness. In addition to the implicit assumption of the validity of consensus, this criterion also presumes that irrationality is communicated from leaders to followers. For instance, if we assume that the writer of our tract (the founder of the Church of Christ) was a victim of hallucinations, we would have to assume further that the members of his group are irrational for failing to share the diagnosis.

On the surface, the most literal use of the label "crackpot" is the application of it to persons who collectively manifest standard symptoms of mental disorder. For example, some of the medieval dancing manias could be described as similar to epileptic fits, as well as composed of expressive manifestations usually encountered among psychotics (Hecker, 1885). Unfortunately, this type of analogy merely relegates value judgment from the collective to the individual level. More seriously, such hasty transfer of diagnosis discourages social-psychological analysis: in the case of dancing manias, for instance, it would prevent us from understanding the causal roles of wars, epidemics, starvation, and of the dehumanizing fate of medieval women.

Beyond the fact that the distinction between "normal" and "crackpot" or between "rational" and "irrational" is conceptually blurred, there is also evidence that the psychological processes to be detected in different types of movements must be similar

in kind. Thus, although some movements radically reinterpret reality to conform to their ideology, all movements process reality to some extent; whereas some movements completely isolate their members from the outside world, all movements feature some measure of uniqueness and separateness. In these and other areas, the psychologist can find the extreme helpful in understanding more routine manifestations.

THE COMPOSITION OF SOCIAL MOVEMENTS

Spectators sometimes voice the suspicion that those engaged in social movements are a distinct human breed. Thus, conservative observers may visualize civil rights advocates as unwashed malcontents with scraggly beards; liberal partisans may picture members of segregationist movements as bloodthirsty sadists with blunted human sensibilities. Crane Brinton (1958) has pointed out that early stereotypes of revolutionists tended to invoke "a seedy, wide-eyed, unshaven, loud mouthed person, given to soap box oratory and plotting against the government, ready for, and yet afraid of, violence"; or "a sturdy, broad-shouldered steel worker, uncorrupted by the falsities the bourgeois call education, but well versed in Marx and Lenin, strong, kindly, a warrior spirit with just a redeeming touch of Shelley about him" (1958, pp. 114-115).

Stereotypes about the unrepresentative nature of active members in social movements may center on their personality, intellectual makeup, or demographic characteristics, or some combination of these. Hatred of authority or authoritarianism, fanaticism or insincerity of conviction, illiteracy or an excess of education, emotionality or intellectual confusion, blind poverty or middle-class dilettantism may all be seen as prevalent or universal. An opposing view would hold that social movements are composed of a cross section of humanity, influenced by tendentious leadership or other biasing experiences.

The evidence, as usual, points to a prosaic middle ground. What appears to occur in fact is that social movements contain a wide range of humanity, but that *within* social movements particular kinds of people may be overrepresented: different kinds of people tend to be overrepresented in different kinds of movements, and the excess may vary from insignificant to appreciable. Thus, Cantril points out that the middle class was heavily involved in the Nazi movement; there was also a slight overrepresentation of the younger age groups (Cantril, 1941, pp. 264-265). The Townsend Plan, according to poll figures quoted by Cantril, was disproportionately supported by older persons, and even more strongly backed by comparatively poor people—among persons on relief, support was overwhelming (pp. 192-193). By contrast, membership in the early Oxford Group consisted heavily of very well-to-do persons (pp. 154ff), and was disproportionately male.

The people whose quota is surpassed in any given social movement tend to be those whose life situation contains the sort of difficulties which the movement offers to ameliorate or solve. For instance, people for whom society provides no means of advancement and no source of satisfaction may join movements which promise escape, either physical (as in "Back to Africa" movements) or otherworldly (Bittle and Geis, 1964; Frazier, 1926; Lanternari, 1963; Smith, Augier, and Nettleford, 1960; Toch, 1965). All-engulfing conspiracies may selectively appeal to economic groups bypassed by industrialization, or to individuals brought up in authoritarian

homes (Adorno *et al.*, 1950; Trow, 1958). Sects featuring emotionally charged religious services may be prominently populated by persons who otherwise lead drab and routine existences (Boisen, 1955; Johnston, 1954, pp. 82ff). In other words, what we encounter among members are not people who tend to be predisposed toward some variety of fanaticism, but persons who must resort to social movements to close the gap between elementary human aspirations and some brand of intolerable reality.

The type of person who joins a given social movement may also be preselected by the formal characteristics of the movement's platform and organizational structure. A group which supplies a simplistic formula to explain complex events may appear uninviting to relatively educated people, who have learned to apply logical criteria to arguments and to look for substantiation of conclusions in evidence (Cantril, 1940). Since a high correlation exists between education and income, the simplistic movement may thus show a relative predominance of underprivileged persons, even though it may not offer to improve their lot. Similarly, within a social movement which attracts a wide age range, the older members may lean toward its conservative, gradualistic wing, whereas the more impatient younger recruits may opt for radical means and relatively rapid change.

THE PRECONDITIONS FOR SOCIAL MOVEMENTS

Since social movements are groups which operate on the margins of conventional society, they owe their origin to various gaps between human needs and social responses to these needs. Every deficit on the ledgers of progress is a problem situation which could provide the impetus for a collective remedial effort.

Most amenable to diagnosis are material deficits, or flagrant inequities in the distribution of material rewards within a given culture or between cultures.

Problem situations are not confined to poor housing, starvation, lack of educational opportunities, and inadequate medical facilities. They may comprise such intangibles as inability to influence one's fate, exposure to inexplicable events, personal humiliations, anonymity, monotony, and routine. Thus, the Gallup Poll has determined that the "most distasteful" aspect of Southern society for the Negro Southerner is "the use of derogatory racial terms when referring to Negroes, and the assumption of superiority on the part of the Southern white" (Fenton, 1960, p. 167). George Fenton, a Gallup Poll editor, cites the following selections from Negro listings of irritating experiences:

For them to refer to me as "boy."
 They figure all Negroes are children and don't believe we can think.
 The way they talk to me . . .
 They refer to me as "girl" or "auntie" rather than as a lady.
 They class me as not being human.
 Lack of common courtesy . . .
 To refer to Negroes as "niggers" . . .
 Saying "boy" and "girl" instead of Mr. and Mrs.
 They don't honor me as a man.

Problem situations may also comprise events which affect the individual only indirectly and remotely. Sensitive persons may thus be disturbed and mobilized into

action by the misfortunes of underprivileged human beings in remote corners of the world. Latin American revolutionary leaders may spring from wealthy, landowning families; middle-class American students may feel impelled to protest the bombing of Asian villages, or may become involved in helping slum children, reconstructing dynamited churches, or inoculating diseased villagers in newly developing countries.

But problem situations are only the *potential* occasions for social movements. In order for such situations to give rise to collective action, they must be experienced and reacted to as remediable *problems*. This transition did not occur, for instance, among medieval peasants, who regarded their misfortunes as divinely ordained (Boissonnade, 1927, p. 147); or among inmates of concentration camps, who had been drained of physical energy and impressed with the hopelessness of their fate (Bettelheim, 1943; Cohen, 1953; Frankl, 1959). The recruits for social movements are individuals who not only find themselves faced with a social deficit, but who (1) experience it as such, (2) view it as remediable, and (3) feel the need to become personally involved in the achievement of the solution. When these conditions obtain, we can speak of individual susceptibility to membership in a social movement.

MEMBERSHIP IN SOCIAL MOVEMENTS

Any analysis of social movements requires concepts to describe the stage of susceptibility to membership—the juncture at which persons who have been, in turn, concerned, discontent, restless, and impatient with conventional society become attracted by a social movement.

“Susceptibility” is a relative term. A person cannot be merely susceptible, he must be susceptible to something; of course, the range of what he is susceptible to may be initially wide. Thus, lowered physical resistance may create a potential host for a variety of microbes, and such a host may succumb to the first microorganisms he may happen to encounter. But “susceptibility” here can be defined only in relation to the disease the person actually contracts. If he suffers from a bad cold, we can infer his susceptibility to the cold virus; it would be risky and unproductive to speculate about his hypothetical chances of contracting syphilis or coming down with the bubonic plague. Similarly, when we speak of a person’s susceptibility to membership in social movements, we may speak only of those social movements in which he shows concrete interest.

Susceptibility, thus defined, varies in degree, from slightly lowered sales resistance to extreme gullibility or suggestibility. Mild susceptibility consists of a willingness to listen sympathetically to the programs of certain movements; strong susceptibility is characterized by avid immersion in sectarian sources of information. In both instances the prospective member goes out of his way to make himself available to certain features of a social movement, which may be assumed to hold appeal for him. When many persons are attracted to social movements in this fashion, we may hypothesize a state of collective susceptibility.

It is this state which has occupied the attention of students of social movements. Thus, Smelser (1963) discusses several factors which lead people to join movements rather than to select other courses of action. (The term “social movement” is confined here to Smelser’s category, “value-oriented movement.”) One of the factors cited by

Smelser is the cultural relevance of the issues to which social movements address themselves. He argues (pp. 320–324) that social movements succeed when their programs remain within a framework of prevalent concerns. Smelser also points out (pp. 324–338) that social movements may owe their success to the unavailability of other means of expressing protest.

Lang and Lang (1961, p. 507) emphasize the fact that

Social movements . . . are more likely to arise in a society undergoing rapid social change than in a stable one. A revolution in technology, for example, creates new conditions requiring adaptation. Also, the more heterogeneous the elements making up a society, the more likely it is that the various subgroups will be affected in different ways by changes; sudden crises may sharpen cleavages already present. Unless mechanisms exist for the adaptation and incorporation into the social order of the demands of dissatisfied groups, these segments of the population, finding their aspirations unrecognized, will provide a fertile field for the growth of sectarian associations.

Other students of social movements, including Lasswell (1930) and Cantril (1941), have noted that the periods during which movements tend to arise or grow (economic upheavals, postwar periods, etc.) are characterized by the failure of old norms to accommodate new circumstances. Lasswell maintains that a process of “symbolization” or search for new symbols occurs whenever conventional formulas fail to represent objective reality and personal needs (1930, p. 186). Cantril describes as “critical situations” those in which an individual is confronted by a chaotic external environment which he cannot interpret and which he wants to interpret. Cantril adds that “it is during such periods that people accustomed to the established order of things become frightened, that old values are apt to be overthrown, that new standards may arise” (1941, p. 64).

One question which such statements raise is whether the new “symbols” or “standards” are present both during times of contentment and periods of crises, or whether the same circumstances which produce the demand for new solutions also originate the supply. Some scholarly discussions appear to presuppose a constantly revolving pool of floating formulas, whereas other writers (Blumer, 1946; Hoffer, 1951) assume that cynical leaders can recognize the market for platforms and slogans and avail themselves of the opportunities that arise.

Though both of these conditions probably occur, it is likely that the platforms of many social movements, with their appeals to potential members, originate among some of the affected individuals, who happen to be slightly more concerned, or more verbal, or more ambitious or pretentious or strategically located than their fellows. Thus, in 1964, thousands of West Coast telephone subscribers became indignant because automation was about to deprive them of their exchange designations. It *happened*, however, that two fairly ingenious members of this group began to ruminate about the possible remedies while conversing in an espresso establishment. The result, thanks to the prevalence of anti-digit feeling, was the “Anti-Digit Dialing League.” Similarly, it just *happened* that a First World War veteran obsessed with anti-Semitism shared his concerns (and their implications for explaining and reversing postwar conditions) with a German nation violently smarting under humiliating defeat (Abel, 1938; Cantril, 1941, pp. 210ff; Hoover, 1933). In these and other

instances, the psychological susceptibilities produced by a problem situation encounter a set of appeals inspired by *the same situation*, and a social movement is born, or gains strength, from the transaction.

CONVERSION AND RECRUITMENT

In movements which persist over two or more generations, membership may be transmitted from father to son, in the same fashion as the child inherits his place in institutions such as the Methodist Church and the Republican Party. This type of socialization entails the direct and indirect indoctrination of the child with values, assumptions, beliefs, attitudes, and needs which predispose it to membership. The parent's enterprise is facilitated by an almost complete monopoly on sources of information, by the child's dependence, and by the process of "identification" whereby the child defines its own identity by emulating its parents.

Since social movements are relatively impermanent compared with institutions, it is more characteristic for members to be recruited to them as adults. And since recruitment to a social movement generally represents a departure from conventional beliefs or attitudes, it frequently occurs in the form of a conversion experience, though sometimes a mild and casual one.

Conversions (as aptly noted by William James, 1902) appear to be spontaneous and sudden, but in fact mark the culmination of various unconscious ideological shifts. They are the surface peaks on the icebergs of change. They may be occasioned by innumerable "critical situations" in which conventionally acquired beliefs have proved inadequate guides for encounters with reality.

In other words, the likelihood of conversion is enhanced to the extent that the believer encounters experiences which are not provided for in his frame of reference. Rapidly changing circumstances or shifts in personal patterns of life may provoke reevaluations or reexaminations of beliefs; intensive efforts to apply beliefs, or to systematize them, may produce the same result. Such efforts may point up inconsistencies and logical weaknesses, and they may reveal failures of assumptions to account for realities. They may also define the extent to which beliefs are nonresponsive to personal needs and aspirations (Toch, 1965).

One of Martin Luther's biographers observes that Luther's "revolt against the medieval Church arose from a desperate effort to follow the way by her prescribed" (Bainton, 1955, p. 27). Luther himself describes protracted struggles with feelings of guilt, and agonizing efforts to cope with a "just and angry God," all of which finally led to a radical departure from the system he was attempting to apply. "Thereupon," Luther writes, "I felt myself to be reborn and to have gone through open doors into paradise" (Luther, cited in Bainton, 1955, p. 49). Luther's description of the exhilaration following his conversion coincides with other such reports. Arthur Koestler thus indicates "to say that one had 'seen the light' is a poor description of the mental rapture which only the convert knows" (Koestler, in Crossman, 1952, p. 22). The "mental rapture" involved is probably at least in part relief experienced at not having to continue to sustain untenable beliefs in the face of invalidating experiences. And it also probably represents the first stage of a process of consolidation and self-justification—a "reduction of dissonance" (Festinger, 1957) between old and new beliefs, and between the premises of the movement and the assumptions prevalent in the remainder of society.

SOCIALIZATION AND CONVERSION

Although conversion to a social movement represents a marked departure from the teachings inculcated in conventional children by conventional parents, the break is partly deceptive. For instance, there may be more continuity in content than meets the eye, as is the case with student leftists whose parents held liberal views in the days of the New Deal. Or departures in content may exist by virtue of similarity in process or approach. A member of the Rockefeller family, for example, explained his conversion to the Democratic Party by stating that "I feel very deeply about my family. Historically, ours is a name that has been associated with Republicans. But an even stronger family tradition has been the proposition that that which best reflects you as an individual is that which brings out the best in you" (*New York Times*, February 2, 1966). Similarly, dogmatic parents may be indirectly responsible for the extremity of departures from their teachings. An example of extreme reaction to extreme socialization is that of a young female nudist, who recollected that "one of my female relations, for instance, will not have a male physician; another disapproves of bathing suits; a third will occasionally take a sunbath in the garden in a pair of shorts but worry that she may be exposed to the people in an airplane flying miles overhead. Most of them will not permit even another woman to see them disrobed, and there is even one who dislikes undressing in front of herself. She suffers it—but quickly covers herself" (Marden, 1959, p. 27). After describing her first nudist experience in highly favorable terms, this convert, with considerable insight, compared her feelings about clothes to those of a locust crawling "back into the narrow, constricting shell *from which it has burst free*" (p. 42, italics ours). Finally, in most instances, conversion is related to socialization because it comes about when the beliefs acquired through societal transmission fail to prove reliable or satisfying when tested in concrete experiential encounters. The psychological responsibility for disillusionment must thus be distributed between the problem situation and the inherited frame of reference.

THE EFFECTS OF MEMBERSHIP

Many of the characteristics of the more devoted members of social movements—the firmness of their convictions, the intensity of their loyalty, the apparent disdain for outsiders, and the like-mindedness of their utterances—have pointed to the assumption that social movements attract potential fanatics, or persons with a special propensity for self-immersion into an exclusive, pervasive, and all-absorbing collectivity (Hoffer, 1951).

Although a case for a link between fanaticism and membership could probably be made in relation to a small minority of members of a few movements, its generality would be sharply limited. For one thing, there are movements (such as early Buddhism, Unitarianism, the Bahai movement, and certain pacifist and pre-civil liberties groups) which stress tolerance, rationality, and the importance of intellectual diversity. Second, every social movement reveals, upon protracted and intimate contact, a wide range in levels of commitment and conviction. Finally, and most important, membership in social movements can *produce* fanaticism just as easily as fanatics may be attracted to movements.

Many persons join a social movement initially in a tentative fashion, with only superficial acquaintance with its ideology and aims. Gabriel Almond quotes an

interviewee who described his induction into the Communist Party as a session in which he was presented with a handful of pamphlets: "The first was against Trotsky, of whom I'd never heard. It was eighty pages long. The most dreary thing; I couldn't understand it. Later they gave me Stalin's *Foundations of Leninism*, and some Marx" (Almond, 1954, p. 101). Almond observes that only one out of every four Communists "had been exposed to the classical writings of Communism before or at the time of joining."

Over time, the average member becomes more intimately associated with his movement. First, he commits himself to the movement, in the sense of investing time and energy in activities associated with membership. Although commitment may be sparing and undemanding, as among individuals who attend meetings or make financial contributions or place bumper stickers on the cars of their friends, it may range to the type of total and all-consuming dedication found among freedom riders, guerillas, and flagellant monks.

Second, members receive increasing confirmation and support from authorities provided by the movement through its leadership and literature, and through the consensus of beliefs among its members. This type of confirmation links the member more firmly to the movement, and makes it increasingly difficult for him to question its ideology. It is not uncommon for "self-help" movements, for instance, to devote the bulk of their meetings to testimonials asserting the unique effectiveness of the techniques advocated by the group—a procedure which ensures that members expend the required energy (Toch, 1965, pp. 77ff). The member may also gradually develop a need for the security provided by authority, as exemplified by the fact that ambiguous situations may result in demands for a "party line" within the Communist movement.

Third, the member's needs and purposes become tied to the community of members, and to the movement's aims. A member may come to feel, in the long run, that his personal identity depends completely on his membership. A person belonging to a California sect thus tells us that "When I walk along the streets of San Jose it's like being in a foreign land among strangers. It's hard to explain . . . I feel lost and I want to get home to the [sect's] laundry group . . . We have harmony here" (Dohrman, 1958, p. 109). Even when the emotional involvement of the member with his movement is less extreme, many of his satisfactions come to derive from his associations with the movement and his activities in it. This emotional stake may produce an increasingly dogmatic and irreversible attachment to membership.

Probably the most important consequence of being a member is the cumulative self-reinforcement of beliefs through perceptual and cognitive restructuring. The person who holds firm convictions, especially if these are systematized or intimately linked to his needs, comes to reinterpret reality to make it conform to his preconceptions (Bacon, 1620; James, 1902). This process is continuous, and gradually widens the gap between subjective and objective reality, until the member lives in the rarified world of a *closed system* which he imposes on all his experiences (Rokeach, 1960). He may gain the illusion of reliability, while other people may become aware of the perceptual contortions and logical gymnastics which make the result possible. Given the final stage of this sequence, it is quite easy for an observer to conclude, although falsely, that the typical recruit to a social movement is blindly and stubbornly closed-minded.

THE PSYCHOLOGY OF DISAFFECTION

The argument that members tend to be increasingly tightly bound to the groups to which they belong does not imply that whoever fails to escape in time is predestined to remain a member for the rest of his life. We have seen that social movements tend to include a wide range of persons, and in order to meet fully the needs of some of these members, a movement must slight the requirements of others. It is also obvious that demands made by the collectivity must at times encroach on, or conflict with, vestiges of preinduction identity and individual needs. Although such junctures may merely tax loyalty, it stands to reason that a sufficient number of excessively stringent tests may break the bonds which tie the member to his movement.

Gabriel Almond (1954) has stressed the frequently cumulative nature of disaffection. He notes that among several Communist Party members included in his study *The Appeals of Communism*, "disaffection began at the point of affiliation, and even before any involvement in activities." Thus (Almond, 1954, p. 101):

An individual may join the party in some doubt as to the wisdom of his decision. He may resent the impact of the party activities on his non-party interests and relationships. He may be offended by the process of indoctrination by slogans. But even though dissatisfactions may accumulate at each one of these stages, his original momentum and party pressure keep him in line until some sharp impingement of his interest, feelings or values takes place. Even at this point, inertia may keep him in the party, even though he has already defected in spirit. He may wait until a general party crisis makes it possible for him to withdraw with a minimum of conflict and publicity.

Two types of new members are especially susceptible to disaffection and eventual defection. One of these is the person whose conception of the movement is closely shaped by his own experiences and needs, and may thus come to differ sharply from the conception of the same movement held by its leaders, policy makers, and spokesmen. Liu Shao-Ch'i complains of early recruits to the Chinese Communist Party, who viewed their affiliation as a means of obtaining land distribution, fighting against Japan, escaping the family, avoiding taxation, or ensuring their physical survival without understanding "the more advanced true communism" (Liu, 1952, pp. 117-118). Idealized or partial views of a social movement require continuous selective perception for their maintenance, and may succumb to dramatic and demanding experiences, such as those provided by rapid changes of policy or tactic.

Another type of member whose continuance in the movement is problematical is the person who makes membership conditional on the satisfaction of his private needs, or who develops dispositions or attitudes which cannot find expression in the movement. Liu Shao Ch'i thus describes "opportunists" as tractable when personally successful, but "when they can't achieve their objectives, when they are attacked or treated coldly by comrades in the Party, there is danger they will waver" (p. 122).

As in conversion to a social movement, defection (conversion *out of* a social movement) is a process which occurs undramatically over a period of time, and many experiences tend to contribute to it. The final, "precipitating" experience is usually the one which stands out in the mind of the defector as the apparent occasion for defec-

tion. It usually occurs, however, when the hold of the movement has been sufficiently loosened for the member to be able to face life "outside."

This does not mean, of course, that the typical ex-member faces a smooth and rapid adjustment to the outside world, or can easily jump into membership in another movement. On the contrary, many years of agonizing readjustment may follow defection, and the discomfort of the search for a new identity is far from facilitated by the hostility of ex-comrades and the suspicion of the nonaffiliated.

SOCIAL MOVEMENTS AND CONVENTIONAL SOCIETY

Although most social movements have points of difference with conventional society, the strain in the relationship between the world of the movement and the "outside world" may vary. Some movements stress points of divergence, and attempt to keep their members uncontaminated by conventionalizing influences. Early Christians, for instance, were enjoined: "Be ye not unequally yoked together with unbelievers: for what fellowship hath righteousness with unrighteousness? And what communion hath light with darkness? . . . Wherefore come out from among them, and be ye separate . . ." (II Corinthians 6:14, 17). This kind of effort to maintain the microcosm of the movement pure may not be uniformly successful. Younger or less dedicated members, for instance, may show a tendency to succumb to the fleshpots of the world, or may demand greater conformity to its ways. Often, pitched battles develop between "conservative" and "modern" factions, from which either side may emerge victorious. An illustration of a conservative victory is provided by the recent D.A.R. Convention in which a resounding majority defeated an attempt by some chapters to temper criticisms of the United Nations. A liberal victory is exemplified by a change of policy in the Sons of Freedom Sect of Canadian Doukhobors which modified the sect's opposition to entering its children in public school classes.

Social movements frequently operate on the assumption that their continued survival depends on making membership compatible with acceptance by outsiders. Movements may thus drop distinctive features or radical planks in their platform, may try to broaden their membership base, or may cooperate with outsiders to achieve joint objectives. Beyond a certain point, efforts by social movements to "adapt" in this fashion tend to convert them into institutions. This type of change, typified by the transformation of sects into denominations, has been labeled "institutionalization" by sociologists. In its extreme form, this implies a loss of interest in former beliefs and in original aims. The movement dies by merging into society at large; it also stops addressing appeals to the discontent members of society, and thereby forces them to look elsewhere for groups that can serve as a vehicle for their needs (Niebuhr, 1929; Pope, 1942).

If a social movement fails to "adapt," and continues to stand in contrast and opposition to the society which surrounds it, it incurs considerable risk to its survival. For instance, if it gains power or if conditions improve, it may become an anachronism (Hoffman, 1956; Messinger, 1955). If, on the other hand, conditions do not improve, the leaders of conventional society may feel forced to persecute the members of the movement because they offer a temptation to other victims of the system. Totalitarian governments like that of South Africa may thus expend considerable resources in futile efforts to keep individuals from revolting against intolerable conditions.

PRESSURES AND TEMPTATIONS

One of the more ironic types of historical event is the spectacle of an institutionalized movement persecuting nascent social movements. Thus Martin Luther, several years after his protests against the "execrable bull of anti-Christ," signed Melanchthon's demands for the execution of Anabaptists and wrote letters calling for the massacre of protesting revolutionary peasants (Bainton, 1955). The Soviet Communist Party, victorious in its revolt against the social order, condemned its dissenters to death in spectacular treason trials. Plato, the self-styled "gadfly" of Greece, urged that those denying the state religion in public be locked up for life and not buried after death.

Such persecutions denote not short collective memories but changed collective roles. The persecutors are no longer social movements but are the custodians of vested interests reacting against possible exposures of their ideological fallibility, disguising the lack of solidarity of their membership, or sweeping under a rug the social or economic inequities in their system. Although inquisitions and witch-hunts have all the earmarks of the wolf shouting "Wolf" at the lamb, we must recall that social movements are reactions to problem situations, and therefore constitute temptations to other disaffected persons.

Actions against social movements may range from attempts at wholesale suppression (as in South Africa) to devious and informal pressures. An illustration of the latter is the treatment of Mrs. Madalyn Murray, the militant atheist responsible for the Supreme Court's public school prayer ban. Mrs. Murray and her children were not only physically assaulted by neighbors, but local courts collaborated in the destruction of her two dogs for barking (*The Realist*, November, 1962). Other instances of deviousness are a New York law denying driver's licenses to Communists and a South Dakota statute preventing Hutterite colonies from acquiring land in that state.

Curiously enough, the forceful suppression of social movements has been found ineffective in various historical contexts, because persecution tends to increase the severity of the problem situation and because it helps to promote solidarity among those being persecuted. Early Christianity and the American Revolution are typical instances of the failure of negative sanctions. On the other hand, informal temptations and reforms of problem conditions often succeed where force fails, because they undercut the motivation to membership. Thus, Portugal appears to have sustained its colonial position in Angola by means of wholesale reforms (*New York Times*, May 5, 1966), and Amishmen and Old Believers in the United States have been induced to cut their beards through the lure of television sets and other home implements (*New York Times*, April 27, 1966). The relative effectiveness of positive measures lies in the fact that they promote institutionalization, whereas persecution perpetuates the active, militant phase of social movements.

AN ILLUSTRATION: THE BLACK MUSLIMS

Some of the propositions discussed in this section may benefit from an illustration. For this purpose we shall refer to a social movement which has been much dealt with in the popular literature, and which has been subjected to at least three sociological studies, one at its origin (Beynon, 1938) and two at the high point of its development (Essien-Udom, 1964; Lincoln, 1961). The movement in question is the Black Nation of Islam, a cult founded in 1930 in the inner city of Detroit.

At its inception, the "Black Muslim" movement drew its members from the ranks of illiterate Negroes who had migrated in the search of employment from the semi-starvation and terror of the Deep South to the filth and discomfort of an urban slum populated by the discards of an ailing automobile industry. Their fate was that of transfers from the frying pan into the fire, who had the impossible task of adjustment to a completely unfamiliar form of degradation. Their physical survival was barely ensured by public relief, but they were "forced to stand waiting for hours to receive their dole" from surly welfare workers (Beynon, 1938, p. 899). One can easily assume that their frame of mind must have been one of disappointment, despair, bitterness, and resentment.

It has been recorded that "the migrants realized that they suffered much more physical pain than they had in their old homes. They connected this suffering with the civilization of the white man to whose cities they had come. Even before they met the prophet, they had begun to blame Caucasians . . ." (Beynon, 1938, p. 899). This anti-Caucasian sentiment, and the effort to arrive at some feeling of worth and sense of dignity as a person, found strong and systematic expression in the message of the "prophet," who mysteriously arrived in Detroit in the summer of 1930. In the four years of his ministry, the prophet attracted with his antiwhite message a following estimated at 5000 to 8000 alienated American Negroes.

The prophet was a peddler of silks who identified himself as coming from Mecca, and who also claimed to have traveled extensively among the civilizations of Africa. He preached the black man's glorious heritage, and enjoined his listeners to emulate it. He denounced Caucasians and their "tricknology," and especially the "so-called mystery God" of Christianity. He also organized a literacy campaign to enable his followers to read "the proofs about themselves" in various books, whose symbolism he interpreted for them. The prophet produced "authoritative" manuals, some written out, others intended to be memorized by his followers. Beynon (1938, p. 901) summarizes the content of these manuals as follows:

The black men in North America are not Negroes, but members of the lost tribe of Shebazz, stolen by traders from the Holy City of Mecca 379 years ago. The prophet came to America to find and to bring back to life his long lost brethren, from whom the Caucasians had taken away their language, their nation and their religion. Here in America they were living other than themselves. They must learn that they are the original people, noblest of the nations of the earth. The Caucasians are the colored people, since they have lost their original color. The original people must regain their religion, which is Islam, their language, which is Arabic, and their culture, which is astronomy and higher mathematics; especially calculus. They must live according to the law of Allah, avoiding all meat of "poison animals," hogs, ducks, geese, 'possums and catfish. They must give up completely the use of stimulants, especially liquor. They must clean themselves up—both their bodies and their houses. If in this way they obeyed Allah, he would take them back to the Paradise from which they had been stolen—the Holy City of Mecca.

Like other movements which attracted destitute Negroes during the Depression (such as the Kingdom of Father Divine, discussed by Cantril and Sherif, 1938), the Black Muslim movement offered its members access to a microcosm which differed

completely from the degrading reality of slum life. The Muslim convert acquired an "original and true" identity, which included the adoption of his "original" name. Plain Henry Wells thus became Anwar Pasha, and Joseph Shepard was transformed into Jam Sharrieff. But the metamorphosis was far from merely a matter of nomenclature. The habits of frugality, industry, and abstemiousness instituted by the prophet enabled many of his followers to advance economically and to improve their physical well-being.

When the peddler disappeared as mysteriously as he had arrived, the Black Muslim movement saw a rapid decline. This decline was precipitated by factional disputes, and by the discovery that several members advocated—and at least one practiced—human sacrifices. The movement's slump continued throughout the war, a period during which many members were imprisoned for draft evasion. In 1945, the combined membership of the four then existing Temples was 1000 (Essien-Udom, 1964, p. 83). The postwar period, however, marked a steady gain for the movement, and by 1959 an estimate of 100,000 members seemed plausible (Lincoln, 1961, p. 4). Within a matter of a few years the group, under the leadership of Elijah Muhammad (the prophet's successor), had become a major force within the Negro revolt, not only by virtue of its growth and its direct influence, but also because its presence stimulated a stronger stand among more conservative groups. Paradoxically, this latter fact may be partly responsible for the decline of the movement, which seemed to occur in 1963–1964, as the civil rights struggle gained momentum. Another contributing factor is probably the defection and assassination of Malcolm X, a prominent Muslim spokesman.

Eric Lincoln, who studied the Nation of Islam at the high point of its popularity, notes that, although the movement was no longer made up of recent arrivals from the South, the membership did derive from the least adjusted of the most underprivileged strata of the Negro ghetto. The typical Muslim was a young unskilled laborer. His lack of education and skills deprived him of status and opportunities for advancement, but his youth made him unable to accept this fate. In the words of Essien-Udom, "he knows he is black, but he wants to be self-respecting. He may be poor, but he wants to be decent." Essien-Udom adds that "the need for identity and the desire for self-improvement are the two principal motives which lead individuals to join and to remain in the Nation of Islam" (Essien-Udom, 1964, p. 95).

In a typical speech by Elijah Muhammad, his audience is reminded of its underprivileged status and reinforced in its discontent. Another recurrent theme is the past failure of American institutions to serve as vehicles for advancement or as remedies for grievances, with the obvious conclusion that this unresponsiveness will continue.

The Moslem religion is presented as the only appropriate one for the Negro, because it is not a white religion, whereas Christianity serves the needs of the Caucasian oppressor (Muhammad, "Justice for My People," *The Islamic News*, July 6, 1959, p. 7):

The power of Islam is best seen when compared to the failure of christianity:

First, christianity has failed you because it was the religion which first placed you in slavery.

Secondly, christianity has failed you because through its doctrine of turning the other cheek it has rendered you incapable of defending yourself in the hour of peril.

Thirdly, christianity has failed you because it has caused you to forsake the pursuit of justice in this world in the pursuit of an illusory and non-existent justice beyond the grave.

The contrast between this portrait of Christianity and the this-worldly offerings of the Black Muslim version of Islam are emphasized at every meeting, as illustrated in the following excerpt quoted by Louis Lomax (1964, p. 22):

"The Honorable Elijah Muhammad teaches us that God—Allah—is not a spook; we don't worship any ghost for a God. We don't believe in any dead God."

"That's right."

"Our God is a live God."

"Yes."

"He is walking around here with you, among you, in you."

"Yes," the people shout back.

"God is black, like you; God is oppressed, like you; He looks like you; He acts like you; He walks like you; He talks like you . . ."

But although the Black Muslims advertise themselves as a religion, the main import of their ideology is a secular one. It is the premise that there is no hope for the Negro *within* and *through* white American society, but that he must, rather, "go it alone." The Black Muslims demand physical separation, or at least recognized, segregated autonomy. They draw on the past both to demonstrate that white society is by nature evil and oppressive, and to show that the Negro has the demonstrated qualifications to advance materially, unless impeded by the white man.

The Muslim program, as repeatedly published in the movement's newspaper, *Muhammad Speaks*, stresses the need for freedom, justice, and opportunity for Negroes. It rejects the aims of the civil rights movement ("We believe that the offer of integration is hypocritical . . .") and it demands immediate separation, "either on this continent or elsewhere." However, the platform also provides for equal justice, employment, and educational opportunities "as long as we are not allowed to establish a state or territory of our own."

Among the teachings of the mysterious peddler (now identified as Allah himself) which are still stressed in the movement are the assumption of a glorious historical heritage which makes the Negro superior to the white, and a rigid code of personal conduct. The latter ranges from physical habits such as cleanliness and diet, through rules governing one's daily life (including a stress on the family), to recommendations that would ensure a pattern of existence best designed to achieve material success (savings, investment in Negro business, education, etc.).

Thus, both in its interpretation of the past and its demands and predictions relating to the future, as well as through the demonstrated consequences of current conduct, the Nation of Islam tried to dispell among its members the feelings of worthlessness, self-hatred, hopelessness, and apathy which centuries of second-rate citizenship had created. And the movement was able to gain an audience susceptible to its message because it encountered persons whose experiences had led them to conclude that the hitherto tolerated was no longer tolerable.

CROWDS AND SOCIAL MOVEMENTS

Although it is relatively easy to distinguish social movements and crowds from each other conceptually, the differentiation of "real-life" groups is considerably more difficult. First, evanescent social movements and ideologically oriented crowds must be arbitrarily allocated in such classifications. Second, crowds can occur in the context of social movements or as a result of the efforts of social movements, and social movements may be modified through crowd actions. Thus, many revolutions (such as the French and the Russian ones) began with surging, angry crowds. The Montgomery bus boycott initiated the civil rights movement, and sit-ins, demonstrations, and marches significantly altered the course of the movement while also serving as its vehicles. Some movements (such as Chinese Communism and the early Church of Latter Day Saints) have been perpetuated through migrating crowds, while other movements (such as the Nazi movement) consolidated their hold on members through mammoth rallies and other gatherings.

More significantly, crowds and social movements share causes and consequences, and at times embody comparable attitudes and beliefs. We have already noted that the remote occasions for crowds such as the Watts riot can be cumulations of social inequities whose amelioration is also the objective of various social movements, ranging (in the case of Watts) from the civil rights movement to Black Nationalism. Lieberman and Silverman (1965) have correlated the occurrence of race riots with a number of demographic, political, and economic conditions, measured by objective indices. Relying heavily on census data, they studied the underlying conditions of 76 racial disturbances shaking the United States between 1913 and 1916. The most general proposition derived from these data is that demographic and housing characteristics do not alter the likelihood of race riots, but that the job situation for Negroes and characteristics of the municipal government have an important effect.

Similar findings have been made with respect to lynchings. Cantril, summarizing the early literature, points out that "although the economic basis of some lynchings may be dubious and in others tenuous and indirect . . . by and large, lynchings as we know them in this country are inextricably interwoven with economic conditions" (Cantril, 1941, p. 83). Cantril cites a survey by the Southern Commission on the Study of Lynchings which showed that in 21 counties that harbored lynch mobs in 1930 every available economic index revealed substandard economies. Other research has examined the same problem over time (rather than across geographical space), and has revealed that lynchings are highly negatively correlated with the price of the cotton crop (Cantril, 1941, p. 84).

The participants in crowds often cite objectives and reasons that could equally accommodate membership in a social movement. Thus, Sears and Tomlinson (1966), discussing the results of a comprehensive interview study of Watts residents, point out that participation in the Watts riot "was highest among those who either had, or said they would be willing to engage in civil rights activity" (p. 6). Respondents to this California survey also expected that the riot would help the Negro's cause, and they classified the participants as heavily motivated by social and economic grievances. Sears and Tomlinson point out that "in spite of the universal use of the word 'riot' by the authorities and mass media in Los Angeles, fully a third of the sample chose a word from revolutionary rhetoric, such as 'revolt', 'insurrection', or 'rebellion' [in de-

scribing the experience]." The same investigators conclude that "the riot was interpreted as a directed protest against malefactors and against bad conditions with definable goals" (p. 12).

While the participants in crowds and social movements may share common grievances against society, nonparticipants in both types of groups may be united by the fact that they have a stake in established conditions. In the Sears and Tomlinson study, for example, respondents generally classified the opponents of the riot as "conservative, solid, middle-class people" (p. 10).

Even if it is true that the precipitating or instigating conditions of a crowd are frequently specific acts or concrete incidents (whereas the precipitants of social movements are typically more wholesale and gradual), the significance of this fact is not clear. First, a precipitating act (such as an arrest of a Negro by a white officer) often acquires its motivating potential from its symbolic significance in terms of long-term grievances. Second, the role of the precipitating cause is differently assessed if different research techniques are used. Thus, Sears and Tomlinson, through careful analysis of their responses, conclude that the arrest that precipitated the Watts riot did not figure heavily in the minds of Watts inhabitants in assessing the causes of the riot, whereas grievances and expressions of hostility were felt to be crucial in causing the riot.

All this does not mean, of course, that a crowd and a social movement are equivalent. All social movements have some ideological content, while the concerns of crowd members are often relatively trivial. And whereas social movements typically address themselves to the *solution* of social problems, crowds more often than not simply express enthusiasm, resentment, or other emotions. But the fact remains that even such remote episodes as a panty raid and student civil rights movements are to some extent functionally linked. As we suggested in our discussion of the Watts riot, a crowd may be mobilized when the concerns of an underprivileged group are not expressed through social movements. And more important, both types of involvement represent an effort by individuals to sacrifice autonomy for the sake of a shared concern.

THE FUTURE OF THE PROBLEM

Every period of recorded history has had its unique forms of collective behavior. Our race riots, our panics, our revolutionary movements, our student ferment, our ethnic conflicts, our religious revivals, our political extremes, all seem to find parallels in the collective manifestations of earlier historical times.

There is every reason to assume that future generations will face social-psychological phenomena that are in some form equivalent to those of our day. Only when society completely satisfies the needs of every individual can we expect the extinction of collective expressions of the kind discussed in this chapter. Only the perfect society, devoid of frustration and discontent, will fail to breed crowds and social movements.

Imperfect improvement in men's lot will not curtail their propensity to collective action, but merely inflame it, as studies in relative deprivation and rising expectations suggest. Only repressive measures of draconian quality can effectively repress collective outbursts, and the transformation of society necessary to apply such measures cannot be considered a just price.

The control of collective behavior will be achieved, not through advances in theoretical understanding, but through advances in technique. At the present time the most effective way to prevent a crowd is to proclaim a curfew, and the most effective means of dispersing a crowd is tear gas or a drenching rainstorm. Advances in technique are likely, particularly in repressive regimes, to be directed not merely toward dispersing the crowd, but toward retaining crowd members for subsequent interrogation, arrest, and possible imprisonment. Improvements in communication have already been employed by agents of social control for the organization of police action against a mob. At least two forms of theory will continue to compete: one focusing on sociological factors, the other seeking in personality an explanation for collective outbursts. This is true because these two approaches are not so much contradictory as preferred foci of social scientists, varying according to their own personalities. The surest road to theoretical advance in this field is (1) participant observation by social psychologists of collective outbursts and (2) the application of techniques of measurement to what they have observed in the crowd.

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The Social Psychology of Infrahuman Animals

J. P. SCOTT, Bowling Green State University

By social behavior we mean activity which is either stimulated by or has some effect on other members of the same species. It is now generally recognized that almost all animals which show any behavior at all have some capacity for social behavior and, further, that it is very difficult to find any sort of behavior which does not have some element of social causation or consequence connected with it. Because of this fact, animal behaviorists no longer try to split behavior into social and nonsocial categories, but recognize that the degree of sociality of behavior is best expressed on a continuous scale which may run from very close to zero to very close to 100.

Social behavior may be extended to members of another species, but most of the behavior between different species involves organization on the ecological level, expressed in predator-prey and host-parasite relationships, among others. Here again it is sometimes difficult to draw a clear line of distinction, but social behavior is always that which primarily involves members of the same species.

Social behavior involves a higher level of organization than individual behavior, and this should be continually kept in mind in connection with the experimental analysis of behavior on the lower level. Social behavior implies interdependence; consequently, the assumption of independence of individual action is almost never valid in any highly social animal.

GENERAL CONCEPTS

Behavior patterns. The simplest concept concerned with behavior is that of movement, either of parts of the body or of the whole body. Movements are organized into patterns of behavior, and each species of animal has characteristic ways of organizing its movements. An essential step in studying the social behavior of any species is to make an inventory of behavioral patterns, which are the basic tools with which an animal adapts to social situations. Closely related species frequently have similar behavior patterns. For example, barking occurs, with only slight modifications, in foxes, dogs, wolves, coyotes, and jackals.

TABLE 1

BEHAVIORAL SYSTEMS COMMONLY FOUND IN THE ANIMAL KINGDOM

<i>System</i>	<i>Principal function</i>	<i>Example of behavior pattern</i>
Ingestive	Intake of solid and liquid nutrients	Pecking and swallowing by chickens
Investigative (exploratory)	Investigation of environment	Touching objects with antennae (katydids)
Shelter- or comfort-seeking	Adaptation to change in physical environment	Huddling of sheep flock
Sexual	Reproduction	Mounting by cattle
Agonistic	Adaptation to conflict	Growling by dogs
Allelomimetic (contagious behavior)	Group cohesion and safety	"Schooling" by fish
Epimeletic (care-giving)	Care of young or other adults	Feeding young by birds
Et-epimeletic (care-soliciting)	Signaling for care or assistance	Baaing by young lambs
Eliminative	Disposal of urine and feces	Burying feces by cats

On the other hand, more widely different species may have distinctly different behavior patterns associated with the same function. Sheep characteristically fight by backing off and running together head-on; goats, however, rear on their hind legs and throw their heads sideways, clashing their horns together as they come back to the ground. Where a large number of related species are available, it is possible to trace evolutionary changes in behavioral patterns, as Lorenz (1941) has done with ducks and geese.

Behavioral systems. Behavior patterns are in turn organized on a higher level. A species usually has several alternative behavior patterns for the same general function which are varied according to the situation. For example, a goat may use at least two other patterns of fighting behavior besides that described above: namely, butting another in the ribs with a quick upward movement, and shoving with the shoulders. Related patterns are sometimes associated in long chains, as in the courtship behavior of certain birds; or they may be combined and recombined in different sequences, as in the behavior of most mammals.

Where several behavior patterns are associated with a common function, we may speak of a behavioral system; Table 1 gives a list of nine commonly occurring behavioral systems which have been identified in the animal kingdom. This important basic

concept implies that each behavioral system has associated with it its own peculiar physiological and emotional motivational systems, which can be identified. However, the existence of any behavioral system in a particular animal species must be verified by empirical studies. This can be done either by direct observation or by standardized test situations that elicit particular kinds of behavior.

The identification of these systems in widely different phyla does not imply that they are homologous, that is, that they have a common evolutionary origin. Rather, these behavioral systems represent adaptations to certain general functional problems that are common to many animal groups. Homologous behavior patterns, on the other hand, meaning those having a high probability of common genetic origin, can be identified only in closely related species, since behavior leaves no fossils.

Animal societies. As a result of social behavior, individual animals become organized into groups, and it may be stated as a general law that the nature of any social organization is determined by the nature of the behavioral patterns and behavioral systems peculiar to the species. For example, the behavioral repertory of many of the highly social mammals includes patterns of dominance and subordination which permit animals to tolerate one another in close social groups. Such patterns are particularly striking in predatory animals, such as wolves, which are capable of inflicting great damage on either their prey or one another, but which live quite harmoniously in naturally formed social groups. On the other hand, animals like woodchucks have developed no agonistic behavior patterns other than attacking and running away. Consequently, except for brief periods during mating and rearing of the young, woodchucks are always widely dispersed (Bronson, 1964).

Because behavioral patterns vary and because each of the general systems of behavior is present in some species and absent in others, widely different kinds of animal societies can develop in different animal species. Each kind of behavioral system tends to produce a particular kind of social organization. By themselves, investigatory behavior, shelter seeking, and sexual behavior usually produce little more than temporary aggregations, which constitute the characteristic form of social organization in most of the invertebrates. Agonistic behavior tends to be dispersive in its effect and, unless it is accompanied by other behavioral systems having cohesive effects, acts to prevent the formation of groups.

Care-giving behavior, which frequently includes the providing of food by one animal for another, tends to produce long-lasting associations. Such behavior is found only in the arthropods and vertebrates. Among the former, it is most highly developed in the insects, particularly in the societies of ants, wasps, bees, and termites. A general characteristic of these insect societies is mutual feeding, or trophallaxis.

Among vertebrate animals there is a great variety of social organization, ranging from the very simple to the highly complex. Many vertebrate societies include groups based on allelomimetic behavior, or mutual imitation. Such groups are rarely seen among invertebrates because allelomimetic behavior depends on sense organs which permit continual contact and coordination with the movements of other individuals. Among birds and diurnal mammals, contact is largely accomplished by vision, but in water-living animals, such as porpoises and many fish, it may be accomplished by sounds as well. Unlike the social insects, whose sexual behavior is brief in duration and often disruptive in its effects, many of the higher vertebrates form long-lasting mating bonds associated with sexual behavior. Like the insects, they may also form groups based on the care of the young.

TABLE 2

OCCURRENCE OF BEHAVIORAL SYSTEMS IN THE ANIMAL KINGDOM

<i>Phylum</i>	<i>Behavioral system</i>								
	Shelter seeking	Investigative	Ingestive	Sexual	Epimelic	Et-epimelic	Allelomimetic	Agonistic	Eliminative
Protozoa (one-celled animals)	X	X	X	X	—	—	—	—	—
Porifera (sponges)	—	—	—	—	—	—	—	—	—
Coelenterata (corals and jellyfish)	?	X	X	—	—	—	—	—	—
Echinodermata (starfish, sea urchins)	X	X	X	—	—	—	—	—	—
Platyhelminthes (flatworms)	X	X	X	X	—	—	—	—	—
Nemathelminthes (roundworms)	?	?	X	X	—	—	—	—	—
Annelida (segmented worms)	?	X	X	X	—	—	—	—	—
Arthropoda (crustaceans, insects, spiders)	X	X	X	X	X	X	*	X	X
Mollusca (snails, squids, bivalves)	X	X	X	X	—	—	*	?	—
Chordata (especially vertebrates)	X	X	X	X	X	X	X	X	X

* Infrequent

These three different forms of social organization may be found completely separated or joined together in various ways. For certain fish—mackerel, for example—the society is the school, based entirely on allelomimetic behavior, and no care is given to the young. Other fish—for example, sticklebacks—live in schools except when they build nests and briefly care for their young. Most of the songbirds seasonally alternate two types of social organization, flying in flocks in the winter and

forming mated pairs and rearing young during the spring and summer. Herd animals, such as mountain sheep, may combine allelomimetic organization with care giving, as when the females form a separate flock with their lambs; and in most primate societies there is a permanent combination of these forms of social organization in a single group.

Occurrence of social behavior in the animal kingdom. The distribution of different forms of animal societies is closely correlated with the distribution of the different behavioral systems (Table 2). If one omits the sponges, which are completely immobile animals as adults and therefore show no behavior, there are three behavioral systems almost universally found in the animal kingdom: shelter-seeking, investigative, and ingestive behavior. Sexual behavior is found in every major group except the coelenterates and echinoderms, which reproduce merely by releasing eggs or sperm into the surrounding water. Special patterns of eliminative behavior are unnecessary for animals living in water, and such behavior is found only in the land-living members of two phyla, the arthropods and chordates. Care of the young, and the responses of the young in the form of care-soliciting behavior, are found in only two groups, arthropods and chordates, and the same is true of agonistic behavior. Many of the lower vertebrates prey on other species, but there are no known cases of social fighting. Allelomimetic behavior is primarily a vertebrate behavioral system, since the highly developed vertebrate eye makes it possible to keep track of the movements of other animals at a distance. However, there are a few instances of allelomimetic behavior in arthropods, the most noteworthy being the army ants, which move in a coordinated fashion by means of touch and scent. The only other group of animals with the potentiality of exhibiting allelomimetic behavior is one class of molluscs, the cephalopods, which have as highly developed eyes as vertebrates. Squids are reported to move in groups, but whether or not their movements are highly coordinated has not been verified. In general, two of the so-called higher phyla, the arthropods and chordates, stand apart from the rest in their development of social behavior systems.

SOCIAL ORGANIZATION

Group formation and cohesion. Each behavioral system may be examined for its dispersive and cohesive effects. Only one kind of behavior, agonistic, has the general effect of keeping animals apart from one another. The rest have at least some cohesive effect, but it is not necessarily continuous. Animals like the one-celled paramoecium may seek protection among one another's bodies under unfavorable conditions, but disperse when the situation changes. Sexual behavior draws animals together, but since most animals mate only seasonally the effect is temporary. Ingestive behavior draws animals together only while one animal feeds another, though this is fairly continuous in the case of animals that feed their young, like birds and mammals. The same behavior may draw animals apart as they search for food in different directions. Investigatory behavior has perhaps the most temporary effect of all, because once social investigation is accomplished animals may draw apart to investigate other aspects of their environment. These four kinds of behavioral systems have the net effect of forming temporary aggregations, and since only these forms are found in the six lower phyla of invertebrates, temporary aggregations are the only sorts of social groups found among them.

Eliminative behavior has a very minor effect on social cohesion, and its social function is usually one of communicating the location and identity of an individual. Care-giving or epimeletic behavior tends to draw animals together over long periods, for the care of young tends to be an almost continuous process. Likewise, allelomimetic behavior draws animals together as long as they are reacting to each other.

However, none of these forms of behavior in itself acts as a continuous force for cohesion. The long-continued association of certain animal groups must therefore be explained on the basis of another phenomenon, the formation of a social bond (see pp. 617-619).

Social relationships and relationship theory. A social relationship may be defined as regular and predictable behavior occurring between two individuals. The concept is an old one in human sociology, but its importance in animal societies was first recognized by Schjelderup-Ebbe (1922) in his study of social organization in flocks of hens. Once he learned to recognize individuals in a flock, he discovered that each hen reacted to each of the others in an individual manner. When there was conflict over food, one hen would usually peck at the other, which either submitted or avoided the pecking. In this way the total organization of the flock could be analyzed in terms of *dominance-subordination relationships*.

This prototype of animal social relationships can be analyzed in greater detail. When two strange hens meet for the first time and are placed in a competitive situation over food, they are likely to fight. Eventually one wins and the other loses, and in a short time this behavior is reduced to firmly established habits, one animal habitually threatening and the other habitually avoiding. Such a relationship is developed through learning but has considerable stability. It is also dependent, as pointed out above, on the species' having behavior patterns that are appropriate for the dominant and subordinate roles.

C. R. Carpenter (1964) extended the relationship concept in his studies of howling monkeys and other primates. Being unable to recognize individuals except on the basis of age and sex, he described relationships in terms of interaction between males, between females, between young animals, and all possible combinations of the three. He also stated the formula for the number of social relationships between all individuals in a group: $n(n-1)/2$.

In addition, Carpenter extended the concept of a relationship to include behavioral systems other than the agonistic. He and other workers have recognized two other important kinds of relationships in which only one behavioral system is involved: *sexual relationships* and *leader-follower relationships* (the latter developed from allelomimetic behavior). Other, more complicated relationships found among animals are the *care-dependency relationship*, typically formed in parent-offspring groups of birds and mammals and involving epimeletic, et-epimeletic, and ingestive behavior; and the *mutual-care relationship* seen between workers in ant colonies and involving reciprocal feeding. Another example of mutual care is found in the reciprocal grooming of pairs of monkeys and apes.

The possible complications of relationships have never been fully explored in any animal species. It is usual to speak of one animal in a pair as the dominant individual, but it is at least theoretically possible for one animal to be dominant in one situation, and the other dominant in other circumstances. The total relationship between any two individuals must be analyzed in terms of a set of subrelationships which may or may not be related to one another and may be highly specific to certain situations.

Thus, the total organization of a group can be expressed in a network of relationships. The unit of social organization is not the individual but the relationship between two individuals, and this is composed of the behavior of both and their interaction. The result is not a static system but a dynamic one with a fair degree of stability.

The ecology of social organization. Groups are held together not only by social behavior but by the limitations of the physical environment. Fish in a pond with no outlet are kept together because they cannot escape, and many other sorts of physical barriers may lead to group formation. However, a much more important phenomenon is the almost universal tendency of animals, except perhaps those living continuously in the deep water of oceans, to form attachments to particular localities. For example, salmon return from the ocean to spawn in the same streams in which they were hatched, and birds return year after year to the same localities for nesting. In many animals there is a short period during early development in which they become attached to particular places. This process of attachment appears to be very similar to, if not identical with, the process of primary socialization, which will be discussed below.

When animals can be individually recognized, as they are when banded or tagged, they are found again and again in the same areas, which can be mapped out as the *home range*. In addition, many birds during the breeding season guard certain areas as a *territory*. The two things may or may not be identical. During the breeding season a male blackbird is likely to confine his home range to his own territory but may extend his range widely, along with other birds, during the rest of the year. A territory may therefore be defined as an area whose boundaries are defended, whereas the home range is the area in which an animal wanders but which he does not defend. For example, wolves defend only the area immediately around the den as a territory, but the wolf pack may hunt in an area with a 50-mile radius. It would be impossible to patrol effectively the extended boundaries of the hunting range, and the wolf pack actually defends only the small area.

The best examples of territorial defense are found among birds, highly mobile animals whose excellent eyesight enables them to keep track of intruders over fairly wide areas. Many mammals do not show territoriality at all; this is true of the large herd animals, like bison or elk. Deer mice have overlapping home ranges and when they meet tend to mutually avoid one another. Other nocturnal rodents, such as house mice and Norway rats, are able to guard only small areas around their nests (Scott, 1966). However, the prairie dogs of the west, which are diurnal ground squirrels and highly social, have definite territorial boundaries within the colony that are defended by attacks and threats.

Development of social organization. As stated above, social behavior alone does not account for the continuous cohesion seen in social groups. Such cohesion is explained by the process of formation of social bonds, which may be given the general term primary socialization.

This process was first extensively studied in birds by Konrad Lorenz (1935), who recognized its fundamental importance and gave it the name *Prägung*, or imprinting. He also gave a list of ways in which this process was different from ordinary conditioning. Since then the process has been experimentally verified in many different species (Fabricius, 1962; Sluckin, 1965). In precocial birds, such as ducklings and chicks, the process takes place easily during the first 24 hours after hatching. Later the fear response increases so rapidly that by four days of age imprinting takes

place with great difficulty if at all. During the most sensitive period, the chick will form attachments to almost any animal or object, including its own or a different species as well as inanimate models. Even completely immobile models produce responses. Moltz (1960) has observed that the chick appears frightened or anxious when alone, as shown by distress calls, and that this behavior disappears as it approaches a familiar object. Thus, reduction of anxiety reinforces attachment. Sluckin and Salzen (1961) point out that a perceptual process is also involved as the chick learns to discriminate between familiar and unfamiliar objects.

In mammals, the process has been most extensively studied in the domestic dog. Puppies, born in an immature state, first pass through a neonatal period characterized by the establishment of neonatal nutrition, or suckling, and then through a transition period during which basic patterns of adult social behavior are developed, before entering a period of socialization at approximately three weeks of age. From this time until approximately twelve weeks of age, the puppy readily forms attachments to other puppies, to human beings, and to inanimate objects in the environment. The peak of the process occurs between six and eight weeks of age and, as in birds, the period is brought to an end by the development of an increasingly strong fear reaction to strange animals. As in birds, the process does not depend on food rewards and is little affected by punishment. The process of primary socialization therefore appears to be largely an internal one (Scott, 1963; Scott and Fuller, 1965).

Harlow (1958) has demonstrated that young rhesus monkeys reared away from their mothers will become attached to inanimate objects and, given a choice of such models, will prefer those which are comfortable, irrespective of food rewards. Harlow concludes that the acquired-drive hypothesis may be discarded.

The behavior of young puppies temporarily isolated from their mother and littermates gives a further clue to the nature of the process. In such a situation the young puppy begins to vocalize at a high rate, emitting 140 sounds per minute, on the average. Restoring the puppy to the group results in the immediate cessation of the vocalization. Somewhat lower rates are obtained if the puppy is isolated in its home pen, and all evidence indicates that the reaction arises as a response to being separated from familiar individuals, combined with being placed in strange surroundings. The arousal of this strong, unpleasant emotion provides a basic mechanism for the establishment of a social bond. In order to reduce this reaction, the puppy must keep in touch with familiar animals and remain in familiar surroundings, and we infer that it will soon learn to discriminate between those situations which arouse the unpleasant emotion and those which do not. In short, this very simple emotional mechanism accounts for the formation of the primary social bond, and the onset of its operation depends chiefly on the puppy's developing the sensory capacity to discriminate between the familiar and the unfamiliar. This is quite similar to Moltz's explanation of anxiety reduction, except that two processes are obviously involved: (1) a relatively mild response to the absence of familiar individuals, which declines with age, and (2) a strong avoidance response to unfamiliar individuals, which increases with age (Scott, 1967).

The process of primary socialization is therefore largely an internal one, little influenced by external stimulation and reinforcement. In this respect it is quite different from behavior under the control of external reinforcements, and this fact accounts for most of the unique features described by Lorenz. The early part of this process is also independent of the development of fear responses to strangers.

During the first part of the period of socialization, the puppy gives only a very brief fear response to a strange individual but reacts strongly to the absence of familiar ones. Later the fear response to strangers may become strong enough to prevent any contact that might result in familiarization. Since this does not imply that the capacity has died out, we may conclude that the process of primary socialization is a persistent one which may permit the formation of other bonds in later life under the proper conditions.

The formation of social bonds in later life has been little studied in animal societies. Schutz (1965), however, has done important experiments at the duck pond at Seewiesen, where numerous species of ducks are maintained. He reared mallard ducklings under various conditions of isolation up to the time of complete feathering and flight at nine weeks. If reared only with their own species, they uniformly mated with their own kind. About two-thirds of the male ducklings reared with another species later mated with the foster species, although seldom with the same individuals that they were raised with. Female ducklings always mated with their own species, no matter what other sorts of ducks they were reared with, probably because courtship is initiated by the males, who normally mate only with their own species.

If ducklings were raised with their own species during the period of primary socialization and were later reared with another species for five or six weeks, they eventually mated with the latter species. Evidently, the primary social bond in these birds is established with particular individuals and not generalized to the species until later. The evidence indicates the formation of three kinds of social bonds: the first with particular individuals, normally the parent birds, and producing the following response; the second a generalized bond with the whole species, formed several weeks later; and finally, a special mating bond with a particular individual, formed during the mating season the following year. Without experimental interference these processes normally result in the duck's eventually forming a mating bond with a member of its own species and thus being able to reproduce its own kind.

The existence of the process of primary socialization has now been verified in a large number of species of birds and mammals. Its most rapid activity is confined to a short period, usually very soon after birth or hatching in the case of precocious animals and later in the case of more slowly developing species. A comparable process takes place in man between the approximate ages of six weeks and six months (Gray, 1958; Scott, 1963).

The bond which the parent animal develops with the young has been little studied except in goats and sheep. Here the mother becomes attached to any kid or lamb presented to her within the first few hours after birth, but later rejects all strangers (Hersher, Richmond, and Moore, 1963).

The results of these studies lead to the critical period hypothesis, namely, that the period in which any social relationship is first established is a critical one for determining both the nature of the relationship and the individual to whom the attachment is formed. The period of primary socialization is a critical one in many respects. Unless the young animal establishes a social bond it will die, and unless the bond is with the proper species it may never have the opportunity to mate with an animal of its own species. Finally, under normal conditions, experience during this period determines which members of a species will become the infant animal's close social relatives.

SOCIAL LEARNING

Modification of social motivation. Most of the data regarding learned motivation are derived from experiments on ingestive behavior, first through Pavlov's experiments on salivary reflexes in dogs and later from Skinner's results on operant conditioning in the rat. The most general findings are that repetition of reinforcement increases the strength of motivation and that discontinuance of reinforcement results in the loss of motivation. These data are quite narrowly based with respect to species, and those on the rat are particularly suspect because of the peculiar physiological nature of that laboratory animal (Richter, 1954). It is not surprising, therefore, to find that these results do not hold up well when applied to different species and to different systems of social behavior.

With respect to agonistic behavior, Solomon, Kamin, and Wynne (1953) have shown that dogs trained in avoidance behavior by the technique of giving them a shock in a shuttle box did not extinguish their behavior, but went on for weeks avoiding the situation in which the shock had originally been given. Some diminution of responses could be brought about if the animals were forced to stay in the situation and discover that the shock had been turned off. However, it may be concluded that fear reactions, unlike eating reactions, are extremely persistent in the absence of external reinforcement.

The fighting behavior of male mice affords a more realistic situation in which to study the effects of learning on agonistic behavior. If a mouse has been severely beaten on more than four successive days, its fear reactions are extremely persistent, even when the animal is given the opportunity to discover that a test mouse never attacks. Under stimulation with dangled mice (a training procedure which causes an inexperienced mouse to fight within a few trials), animals that have been badly beaten continue to show avoidance over a period of months (Scott and Marston, 1953).

The motivation of mice to fight may also be increased by training. As indicated above, dangling one mouse before another and occasionally brushing the helpless mouse against the free one will stimulate the latter to fight. After this procedure has been repeated for several days, the stimulated individual will attack any mouse on sight, not only males but even females and young, which normal males never attack. It is therefore established that the repetition of reinforcement increases the motivation to fight. However, the mouse's motivation to fight is decreased if the repeated stimulation is in the form of dangling the same mouse before him. Reinforcement, therefore, has an effect on agonistic behavior quite different from that on ingestive behavior, partly because of the very different nature of the reinforcing events and partly because the strength of reinforcement can be enormously varied (Scott, 1958).

The effects of experience on sexual behavior are strikingly illustrated by Rosenblatt and Aronson's (1958) experiments with the cat. If an adult cat is castrated prior to having any sexual experience, little if any sexual behavior is elicited by females in heat. However, if the male has had only a single successful copulation prior to castration, sexual behavior will persist for months, and a single experience is just as effective as repeated ones. In the latter case the sexual behavior of the castrated animal presumably has a reinforcing effect also, which in part accounts for the persistence of behavior.

Waller and Fuller (1960) have experimented with a form of social motivation in dogs which is related to allelomimetic behavior. Puppies were raised in isolation

during the period of socialization up until seven weeks of age, and then subjected to 15 minutes of daily handling. Such puppies showed reasonably normal development, and during their tests showed a large number of contacts with other puppies. When, at 15 weeks of age, they were placed together in groups, their tests immediately showed a dramatic drop-off in the number of contacts made with other puppies, the reduction amounting to 75 percent. The puppies thus acted as if they had been satiated with respect to contact. At the same time the puppies did not reduce their contacts with the human handler, whom they saw only once per day.

In another experiment these puppies were trained to run to the end of an alley. The only reinforcing event was contact with the experimenter's hands, which were thrust through a screen. Some of the puppies improved their running times rapidly, as would be expected on the basis of reinforcement theory, but others appeared to be easily satiated and showed no improvement after the first few trials. Introducing a barrier made the slow group much slower, but ringing a loud bell caused all animals to run much more quickly. The results are consistent with the conclusion that the motivational basis for allelomimetic behavior is an emotional reaction similar to fear, and that this emotion is reduced by contact.

Stanley (Bacon and Stanley, 1963) has done a much more extensive series of experiments in which young puppies ran to a passive human being. Running times improved with repeated reinforcement, but contact with the puppies prior to their running appeared to have a satiating effect and increased the running time. Experiments with extinction gave less clear-cut results, possibly because it was difficult to arrange the experiment so that the dogs did not eventually come into contact with people. We may conclude that the reinforcement process associated with allelomimetic behavior is similar to that associated with primary socialization, namely, that contact with a familiar object or individual reduces a strongly unpleasant emotion. In general, the results obtained from these learning experiments with allelomimetic behavior appear to be more similar to those with ingestive behavior than to those with either sexual or agonistic behavior, though there are obvious differences and very different underlying physiological mechanisms.

Only a small beginning has been made in the study of the effects of learning on social motivation, but the evidence we now have indicates that generalizations derived from experiments with food rewards will not necessarily hold when applied to other sorts of behavior.

The modification of social behavior patterns. The social learning experiences of an animal can be drastically modified either by rearing it in isolation or by having it fostered by a different species. The general effect of the latter procedure is to transfer all the social relationships of the fostered animal to the new species and, with these, its patterns of social behavior, ordinarily little modified in form. Dogs, which have been domesticated for approximately 10,000 years and hence could be expected to modify their behavior patterns through genetic selection as well as through learning, still exhibit the same basic behavior patterns as do their wild ancestors, the wolves. Though bottle-reared lambs show little or no following behavior with respect to other sheep, they transfer this pattern with little alteration to human beings.

The most noticeable change in the social behavior of a fostered animal is the change in fear responses. Bottle-reared lambs do not fear dogs, and hand-reared jackdaws show few of the fears of their wild relatives. However, the alteration is

found not in the pattern of fearful behavior but rather in the objects which stimulate it.

Rearing an animal in social isolation produces an even more drastic modification of the social environment. Such treatment often inhibits the development of certain patterns of social behavior. Fox terrier puppies reared in isolation do not attack others, although they are still able to fight back in a somewhat inefficient fashion (Fisher, 1955). Isolation inhibits the development of sexual behavior in rhesus monkeys and also the maternal behavior of the females (Harlow and Harlow, 1965; Harlow, Harlow, and Hansen, 1963). The fact that young animals develop normally when allowed playful contact with others during the proper period indicates that social play may have an important function in the development of certain behavior patterns.

In the Burmese jungle fowl, partial visual isolation produces highly abnormal behavior, including self-direction of both agonistic and sexual patterns (Kruijt, 1964). Isolation also prevents the complete development of song patterns in certain birds (Thorpe, 1961). There is a short period during the life of the chaffinch when the young bird learns the adult song pattern through hearing other males sing. In this case there is a definite modification of the behavior pattern through social experience. There are some reports of similar modifications of vocalization in South American monkeys. Animals reared in captivity develop calls different from those heard in the jungle, and when newly captured animals are brought in they appear to learn the calls of their cagemates.

All this evidence indicates that there is a certain amount of cultural transmission of information from one generation to the next in both birds and mammals. Studies of the Japanese rhesus monkeys, which are regularly fed in the wild, have shown how a new behavior pattern can be spread throughout a species. One troop was fed grain on a sandy beach, and eventually one individual discovered how to separate the grain from the sand by "placer mining," that is, holding a handful of mixed grain and sand under water so that the grain floated off. This behavior slowly spread throughout the troop, more rapidly in younger than in older individuals. A similar spreading of a new behavioral pattern was observed in an English bird, the blue tit, which began to open the paper tops of milk bottles. This pattern spread rapidly through the population, presumably by imitation, though the birds may have discovered it independently.

These instances of malleable behavior patterns are largely those connected with food getting and are not basic social behavior patterns, which appear to be more stable.

The organization of social behavior through learning To what extent can social behavior be reorganized through experience? The above evidence indicates that basic behavior patterns in animals are difficult to modify, but there is always the possibility that behavior patterns can be assembled in different orders and combinations in complex situations. Domestic animals seem to have much less fixed and ceremonious behavior than do wild ones. This difference is usually attributed to the loss of genetically fixed organization, but it may also be due to a difference in early experience and hence to modification through development. The degree to which behavior can be reorganized depends a great deal on the species. The behavior of mammals is, in general, less fixed than that of birds or fishes, in that there are few instances of long chains of behavior patterns. In most mammals behavior may occur in certain se-

quences but the parts can be reversed or eliminated. Certain birds show highly stereotyped behavior. The courtship of turkeys, for example, comprises a long sequence of patterns, and if interrupted the bird goes back to the beginning and starts over again. However, this is not true of all bird species; many are considerably more modifiable in their behavior.

PHYSIOLOGY OF SOCIAL BEHAVIOR

There is no space in this paper to survey the evidence concerning the physiological mechanisms which underlie each system of behavior. Rather, I shall summarize certain concepts and recent factual discoveries which have an important bearing on the problem of the physiology of social behavior.

The drive concept criticized. Most earlier work on the analysis of social behavior assumed that there was some sort of internal drive or drives as well as external stimulation. This concept is, of course, a very crude one and, at best, a term for a group of unknown internal causes and mechanisms. Its principal shortcoming is that it is purely a hypothetical explanation; there is nothing in the physiology or anatomy of the nervous system which resembles water in a storage tank or steam in a boiler. Furthermore, the drive concept implies that whatever mechanisms exist combine into some sort of internal unitary driving force. Such an assumption turns out to be inadequate and oversimplified when any actual situation is analyzed. For example, in many experimental studies "the drive state" of rats was controlled by 24-hour deprivation of food. There is an assumption here that the hunger drive increases in proportion to the hours of deprivation. Actually the physiological mechanisms do not begin to act until the stomach is empty, and metabolic changes proceed only to a certain point, beyond which they are controlled by homeostatic mechanisms. From a behavioral standpoint, the degree of motivation exhibited by the animal under such conditions may be largely the result of the conditioning of both external and internal responses in relation to time, so that hunger contractions appear at a particular hour of the day.

The physiological mechanisms that underlie ingestive behavior are quite complex. The hunger contractions of the stomach are controlled by blood sugar level and inhibited by fullness of the stomach; and, as pointed out above, such contractions can be conditioned as well. In addition, direct physiological stimulation of certain brain centers, depending on the kind of food substance involved, may occur. In short, the physiological mechanisms underlying behavior do not act as a simple cumulative driving force. Rather, numerous and complex internal changes result from metabolic activity, and some of them act as internal stimuli that affect behavior. Motivation exhibited in any situation is the result of the organization of internal changes plus the organization of both internal and external stimuli through the process of learning.

Species differences. The physiological mechanisms underlying social behavior have been explored in only a very small number of animal species. The information we now have indicates that very large species differences do exist. For example, a mouse may lose weight and eventually die if allowed to fill its stomach only once every 24 hours, whereas a carnivorous animal, such as a dog, can go without both food and water for a week without serious harm, and it ordinarily bolts its daily rations within a few seconds. Among the rodents, rats deprived of both food and water will drink first if given a choice, whereas guinea pigs will eat first, and certain species of desert

rodents never drink water at all, deriving all their fluid needs from the water of metabolism.

Physiological mechanisms underlying sexual behavior. The most thoroughly explored of the behavioral systems among vertebrate animals has been that of sexual behavior, and one of its basic mechanisms is the modification of behavior through hormones or chemical messengers. The system of hormonal control in any animal is a highly complex one, but the principal effects on behavior are produced by the hormones androgen and estrogen, concentrated respectively, though not exclusively, in males and females. For example, the male hormone, androgen, produces indirect effects on behavior by modifying the growth of the secondary sex organs in both shape and size, and by modifying the development of the central nervous system (Young, 1961; Young, Goy, and Phoenix, 1964). At puberty the level of hormone is raised, and this change has the effect of lowering the threshold to external stimuli as well as activating the accessory sex glands. Injection of the hormone into certain areas of the rat brain may stimulate sexual behavior (Fisher, 1956). Thus the hormone may have a direct stimulating effect on the central nervous system, ordinarily expressed only in increased activity. In this way the physiological mechanisms may act to produce something similar to a drive, but it does not result from ordinary metabolic activity as it does in the case of hunger.

Physiological mechanisms underlying agonistic behavior. The male sex hormone also has an important effect on the fighting behavior of male mammals: acting to lower the threshold of stimulation. In domestic mice it does not have a similar effect on females, though it does enhance their sexual behavior. The adult male and female nervous systems thus react differentially.

There is no evidence, however, that the male hormone directly stimulates the male central nervous system to produce fighting. Other hormones, such as adrenalin and cortisone, are produced in connection with the physiological activity associated with fighting but do not by themselves stimulate fighting. In short, there is at present no known physiological mechanism which would act as an internal drive to produce agonistic behavior (Scott, 1958).

Most of the work on the neurophysiology of fighting behavior has been done with cats and a few other species of mammals, using two techniques, electrical stimulation and surgical destruction of various parts of the brain (Kaada, 1967). It has long been known that electrical stimulation of certain areas in the hypothalamus will elicit behavior similar to that shown by normal cats in rage or fear, and that if such stimulation is sufficiently prolonged, the behavior may persist for some time after the current is turned off. The hypothalamus is therefore the center of origin of the sensation of anger, as it is for many other emotions.

The results of surgical operations show that certain areas of the cerebrum are inhibitory in function and others are excitatory, though it is still not clear whether these functions are exerted by corresponding areas in different species. Removal of the hypothalamus produces a placid cat, but one that can still show the symptoms of rage if sufficiently excited. Thus, many parts of the brain are involved in the expression of agonistic behavior. The hypothalamus serves to magnify and prolong the effects of stimulation through the emotion of anger, while the excitatory and inhibitory portions of the cerebral cortex exert a balanced control over it, a balance which can be shifted in either direction by outside stimulation.

There is no evidence of any mechanism that would result in the origin and accumulation of internal "drive" independent of outside stimulation. Rather, there is a mechanism, triggered by outside events, which results in the magnification and prolongation of the effects of external stimulation.

Similar results with electrical stimulation were obtained by Saint Paul and von Holst (1962) on the brains of chickens, although the structures stimulated were not well identified. The moving pictures of the experiment show that the fowl so stimulated looked around itself with an apparently puzzled air for an instant, and then reacted according to the situation; that is, if a person was present, the chicken might fly at him and attack, or it might direct similar behavior at a stuffed bird, if it was present. Such results show that agonistic behavior is organized within the brain (though there is no proof of how such organization is achieved), but they no more indicate that stimulation for fighting arises independently in the brain than does the electrical stimulation of the femoral nerve, which produces the leg-withdrawal reaction in a frog. In each case stimulation is caused by electrodes and does not originate from independent action within the brain.

Physiological mechanisms underlying allelomimetic behavior. The existence of a motivational system underlying allelomimetic behavior can be inferred from many experiments. Social facilitation, or increments of behavior resulting when animals act together in groups, is a widespread phenomenon in birds and mammals (Crawford, 1939). Margaret Nice (1937), in studies of the flocking of birds, was the first to associate this phenomenon with allelomimetic behavior (called by her "contagious behavior"). Dogs frequently exhibit allelomimetic behavior as they run together in packs. Under experimental conditions, dogs will show much closer correspondence of running time when they run in pairs than when they run singly, and in the great majority of cases they also run more quickly (Scott, 1967). As mentioned before, puppies are also motivated to maintain contact with human beings. Stanley has demonstrated that the most effective stimulus is a person behaving quite passively, that running time decreases with repeated reinforcement, and that an animal can be satiated by previous contact with an experimenter. The behavior of the animals satisfies all the conditions for the existence of a source of internal motivation which would satisfy the usual definition of a "drive" (Bacon and Stanley, 1963).

Strong indications of the actual nature of the internal motivating system are given by developmental studies (Scott and Bronson, 1964). Beginning at about three weeks of age when it is first capable of visual discrimination, a puppy emits distress vocalization when familiar objects and individuals are absent (see Fig. 1). The response appears without previous experience and is highly predictable. This simple behavioral mechanism will account for the process of primary socialization, or forming social attachments, for an unpleasant emotion is repeatedly aroused whenever the puppy leaves familiar individuals and immediately relieved whenever he returns to them. In simpler terms, the response acts as a reinforcer that should keep the puppy in close contact with familiar individuals. This conclusion suggests that the same mechanism may be the principal source of internal motivation for allelomimetic behavior, since the puppy must very soon learn that the way to feel comfortable is to stay with the other dogs and do what they do. The precise physiological nature of the emotional reaction is yet to be established.

To summarize, the physiological mechanisms that precede and accompany social behavior are highly complex and vary not only from species to species but from one

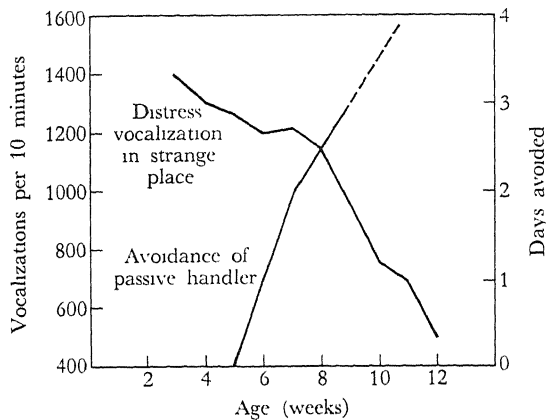


Fig. 1. The development of the two emotional mechanisms involved in primary socialization of the dog. The reaction to the absence of familiar individuals, expressed as distress vocalization, binds the puppy to the familiar, while the fear response to strangers prevents new contacts. The optimal period for socialization to a human being is approximately six to eight weeks.

behavioral system to another. Before they can be completely understood we need to develop a true science of comparative physiological psychology broadly based on a large variety of animal species.

GENETICS AND SOCIAL BEHAVIOR

Genetic variation within a species. Of the nine behavioral systems, important genetic variation has been established in at least four. One of the major sources of genetic variation in behavior is that of sex, which is determined through the transmission of the X and Y chromosomes. In mammals there are important differences between the sexes in agonistic behavior. Most male mammals fight more readily than females and are often physically better equipped for doing so by larger size and greater muscular strength. Among deer the males not only are larger but have special offensive weapons, their horns, which are used for fighting only during the mating season. Male baboons are often three or four times the size of females. As an exception to this general rule, the golden hamster female is both larger and more aggressive than the male. Major sex differences in agonistic behavior also occur in many birds and fish.

Males and females exhibit different patterns of sexual behavior which are correlated with anatomical differences. In mammals, both sexes appear to be capable of both patterns of behavior, but the behavior of the opposite sex is ordinarily not reinforced because of anatomical differences. Furthermore, among mammals certain patterns concerned with care of the young, particularly nursing, are associated with the female sex. Among many birds there is less differentiation of parental behavior, for both males and females may incubate the eggs and feed the young.

In addition to sexual variation, much genetic variation in behavior is attributable to strain and individual differences. Among domestic fowl, agonistic behavior varies

between the extremes of the game cocks, selectively bred for fighting literally to the death, and the more placid breeds, such as the Brahmas developed for meat (Potter, 1949). Similar differences can be found among the various dog breeds. Beagles and other hound breeds have been selected for their ability to get along with one another while running in packs, and strange adult males can usually be brought together without any overt fighting beyond a few threats. At the opposite extreme, the terriers have been selected for their prowess as fighting dogs. It is difficult to raise fox terriers together even as puppies without encountering serious fighting among both males and females (Scott and Fuller, 1965).

Other aspects of agonistic behavior are also quite variable. Certain breeds can be inhibited by threats of punishment much more easily than others. This is a common characteristic of many of the working dogs and of other highly trainable breeds. Genetic differences in agonistic behavior are also found between inbred strains of mice.

Inbred strains of mice also show genetic differences in sexual behavior, and guinea pigs have been successfully selected for high and low responsiveness to sexual stimulation. Different strains of rabbits show different degrees of effectiveness in maternal care of their offspring, and genetic differences in broodiness are well known in different strains of chickens. Marked differences in investigatory behavior are found between breeds of dogs, certain breeds being much more effective than others in their capacities for trailing. The inbred strains of mice also show differences in amounts of investigatory behavior elicited under standard conditions.

Thus there is good evidence that a large amount of genetic variation in social behavior exists in domestic and laboratory animals. Among wild species the evidence is not so good, but a great deal of individual variation is encountered whenever wild species are studied carefully, and it is reasonable to suppose that at least part of it is genetic in origin. There is every indication that large amounts of variation in social behavior also exist in man, but in human subjects it is extremely difficult to separate the effects of genetics and early experience.

Genetic variation between species A species is a large population of interbreeding individuals, and as indicated above, considerable variation exists within the population. Differences between populations also exist and can be easily demonstrated. It is customary to assume that such differences are genetic in origin, though the validity of this assumption cannot be completely established without rearing animals under comparable conditions. Among closely related species the differences between behavior patterns may be very slight. For example, all the members of the genus *Canis* show the behavior pattern of barking, although certain modifications of pitch and loudness make a fox's bark usually distinguishable from that of a dog. Tembrock (1957) made a comparative study of fox and dog behavior and identified all the behavior patterns of the latter except those dealing with dominance and subordination. Except as young animals in litters, foxes do not live in groups larger than a mated pair, and they apparently have not evolved the capacity for behavior patterns which permit mutual adjustment in larger groups.

King (1961) has observed an interesting difference between two subspecies of deer mice, one of which is arboreal and one ground-living. When placed on an electric grid, the ground-living species quickly finds its way to a nonelectrified platform and remains there, whereas the arboreal species leaps around actively and rarely

remains on the safe platform. The different reactions are associated with the fact that leaping may lead to escape in a tree-climbing animal but is likely to reveal the deer mouse to a predator in a grassland habitat.

Such examples as these are easy to find and are often called instinctive or species-specific reactions. The application of these terms does not constitute analysis, and labeling a piece of behavior in such a way merely points out that species differences exist.

Other concepts are needed for the deeper analysis of the organization of behavior, and some of the most useful of these are included in a series related to development. In the first place, behavior as such cannot be biologically inherited. The only entities biologically inherited are the sperm head, which includes the chromosomes and genes, and the egg, which includes the cytoplasm as well as the nucleus. Behavior must be developed, and it is developed under the influence not only of genetic factors but of numerous environmental factors as well.

As development proceeds, behavior is modified by numerous organizing processes, some of which may precede the development of behavior itself. The two most important processes are the growth and differentiation of cells, and learning. In most of the higher animals these two processes overlap in time and interact with each other. The analysis of behavioral organization therefore depends on identifying the various genetic and environmental factors that act on these and other organizing processes.

EVOLUTION OF SOCIAL BEHAVIOR

Social evolution in the animal kingdom In the century since Darwin published his *Origin of Species*, the general principles and phenomena of evolution have become well established. Populations of animals and plants tend to change with time, some rapidly and some slowly. Some of these changes have actually been documented within the brief historical period during which such studies have been made. As they change, populations differentiate from one another, and occasionally populations split and begin to differentiate independently, eventually resulting in the formation of new species.

As it changes, a species may become more complexly organized or, in certain cases, organization may be simplified, as it is in many parasitic animals. For the most part it is impossible to arrange animals on any single scale of organization, for an animal may be organized complexly in some respects and simply in others. The modern concept of evolution takes the form of a tree rather than a ladder, but even this is perhaps an oversimplification, since complexity of organization could be expressed properly only in multidimensional space.

However, there are certain major discontinuities in organization where animals have progressed from one level to another. The most important of these are the transitions from unicellular to multicellular and from organismic to social organization. The former divides protozoa or one-celled animals from the rest of the animal kingdom, but the latter transition has been made in different ways throughout the animal kingdom.

There are two major ways in which the transition from the individual to the social level occurs. In the first, the individuals remain in direct contact in what is usually called colonial organization. This form of organization is important in only three of the major phyla—protozoa, sponges, and coelenterates—although sporadic cases occur in other groups. The most highly developed case of colonial organization is the

Portuguese Man-of-War, a large floating jellyfish sometimes seen on our southern beaches. This animal is actually a colony formed of a large number of different polyps having differentiated functions. Examples of individual polyps, which are the usual form of organization in coelenterates, are sea anemones and the freshwater hydra.

The second mode of transition from individual to social organization is accomplished by independently moving and unattached individuals whose behavior is nevertheless coordinated. For most of the animal kingdom this form of organization never results in more than temporary aggregations. Long-continued associations are found only in two major groups, the vertebrates and the arthropods, and among the latter particularly the insects.

Social organization has evolved along two very different paths in insects and vertebrates. Insect societies have become most highly developed in termites and the Hymenoptera (ants, bees, and wasps). In both groups the emphasis is on organization and coordination of behavior by direct biological means. Termites become differentiated into castes having different form and behavior, in part through hereditary mechanisms, and the caste system in bees is partly determined by differential feeding. Some of the coordination between individual insects is achieved by hormones that are transmitted from one individual to another and have received the name of pheromones. There is also coordination through sensory contact and communication. A. E. Emerson (Allee *et al.*, 1949) has suggested that the insect societies could well be called supraorganisms, and lists many ways in which they are similar to single organisms.

A certain degree of biological control is found also in vertebrate societies, but in a much less complex form. The usual vertebrate society has three castes—males, females, and young—as contrasted with four to six in many of the insects. The vertebrate societies have also developed elaborate visual and auditory signal systems which permit effective communication and coordination at considerable distances. This is made possible both by the larger size and by the improved sense organs of vertebrate animals.

Evolutionary mechanisms. The early students of evolution thought almost entirely in terms of changes in individuals, and they analyzed species in terms of types derived from a single specimen. Since the rediscovery of Mendelian heredity there has been a revolution in biological thinking, and evolution is now studied in terms of the population concept. A species may be defined as a population of individuals whose members interbreed with one another. Such a group of individuals consequently includes a population of hereditary units, the common gene pool. The mechanism of chromosomal transmission of hereditary units arranges these units in random combinations so that any variable heredity is continually appearing in new combinations.

In any highly social animal species the individuals become an organized population, usually with many organized subgroups. In this situation animals do not mate at random, and social organization consequently affects the distribution of genes.

Evolution, therefore, takes place not only on the individual level, but also on the level of societies. A well-functioning social group may survive because the behavior of the individuals is helpful to the group, even though it may not be conducive to individual survival. For example, the territorial behavior of male birds makes them very conspicuous and therefore more subject to predation, but it results in dividing breeding territories so that there is a plentiful supply of food for the young, and it may also attract the attention of predators away from the female and young birds.

Because selection may be acting on both the individual and the social levels, the number of possible adaptive changes is limited, and social behavior therefore tends to be a conservative trait in evolution. The behavior patterns of closely related species are usually quite similar, and the same behavior pattern may extend through large taxonomic groups, such as the family Bovidae, for example, in which the lip curling seen in male cattle and sheep is found in many different species.

SOCIAL BEHAVIOR AND ORGANIZATION AMONG THE PRIMATES

The evolution of primate behavior is of great interest as background information for the understanding of human social behavior and organization. The first studies of this sort were Carpenter's (1964) classical studies of howling monkeys and gibbons, and a less successful study by Nissen (1931) of the chimpanzee. Later Carpenter went on to make more detailed studies of behavior on an artificially fed colony of free-ranging rhesus monkeys introduced on Santiago Island in Puerto Rico. Meanwhile, Yerkes had established the primate laboratories at Orange Park, Florida, where he and his associates concentrated on studying the behavior of hand-reared chimpanzees.

These studies comprised most of the important work on primate social behavior done before the late 1950's. Since then there has been an enormous expansion of field studies on primates, much of which was inspired by Washburn (1961) and his students of physical anthropology, who became interested in the problem of human social origins and applied the methods developed by cultural anthropologists for the study of human societies. Consequently, the amount of information about primates has been multiplied many times, and the information in Hooton's *Man's Poor Relations* (1942) now reads like a historical curiosity.

Howling monkeys. Carpenter's study of the howling monkeys (representative of the new-world monkeys) gave results so different from the popular picture of primate behavior that these monkeys were long regarded as an aberrant species. However, much of what Carpenter observed in these animals has now been found in modified form in the old-world monkeys. A group of howling monkeys usually consists of two or three adult males, a somewhat larger group of adult females, and young of various ages. There is no indication that the differential sex ratio is caused by males leaving the group; rather, it is probably due to disease and accident. Such sex ratios are typical of many monkey societies. Howlers do very little fighting among themselves. The troop is arboreal and spends its time moving from tree to tree eating fruits and leaves. If another troop draws near, the males howl at one another and the groups stay apart, but there is no guarding of specific territorial boundaries. However, each group tends to wander within one general area. When females come into estrus there is no fighting among males, and females may pass from one male to another as the first becomes satiated. Both sexes are interested in the infants and become highly concerned if one is hurt or distressed.

Baboons. The arboreal howlers live in a very different ecological setting from that of man, who is primarily adapted, both in structure and behavior, as a plains-living primate. The most successful plains-living primates other than man are the baboons of the South African plains. The chief difference is that the baboons have not adopted bipedal locomotion and consequently have developed physically more in the direction of the plains-living carnivores, such as wolves, though retaining very efficient hands

and considerable climbing ability. Most observers agree with Hall (1964) that baboons resemble human beings in social organization more closely than do the anthropoid apes, which are ecologically adapted for forest living and tend to develop less closely organized groups.

Baboons were first studied intensively by Zuckerman (1932) in the London Zoo, which had installed a colony under what were then considered to be seminatural conditions. However, the range was small (about the size of a large city lot), the numbers were large, the sex ratio was reversed (with an excess of males), and perhaps most important of all, the animals chosen came from various wild groups and had no previous contact with one another. Under these circumstances Zuckerman observed instances of almost fiendish cruelty and constant bloody fighting, and during the two years of his study, no young survived to maturity. On the basis of reports then available, Zuckerman concluded that the behavior he had seen was typical of wild hamadryas baboons.

It was not until Washburn, DeVore, and Hall (DeVore, 1965) studied savannah baboons under natural conditions in Africa that a different picture began to emerge. In a naturally formed group the males exhibit a definite dominance order, avoiding close contact; and as a troop moves, the center is occupied by the most dominant male, with less dominant males spaced out around him. Thus the youngest adult males are on the outskirts of the group, where they are most exposed to predators. If a predator is sighted by one of them he gives a barking alarm cry, and all the adult males immediately rush over and either threaten or attack. In this way baboon troops can drive off any predator except a lion.

The adult females and their offspring tend to stay in the center of the group, not because they are attracted by the dominant male but because it is the safest place to be. When a female comes into estrus there is no disturbance of organization and no permanent consortship is formed. The female chooses the male with whom she mates. This male may be the most dominant animal or another. She may mate with several males and pass from one to the other without any manifestation of jealousy or aggression on their part.

In the earliest stage infants are carried by their mothers and closely guarded. As they get older and begin to play at a distance, they are still objects of concern; if an infant gives a distress cry, both the mother and any males nearby respond and attempt to drive off the individual who caused it. In this way young members of the troop are trained not to hurt one another, and even when the old males enforce dominance, their action consists mainly of vocal threats and chasing rather than any infliction of severe pain or injury. Under natural conditions baboons thus develop a highly integrated and cooperative group, showing none of the brutal fighting described by Zuckerman. We now realize that he was observing behavior resulting from acute social disorganization.

Like the howlers, a troop of baboons wanders within a fairly definite area and sleeps in certain trees, but no boundaries are defended against other troops. Where different groups have to use the same water hole, the individuals tolerate one another.

Patas monkeys. Much the same general type of social organization is seen in the various species of macaques, which are closely related to the baboons. On the other hand, the patas monkeys studied by Hall (1964) are quite different. Rather than living in open plains, these animals inhabit a dense scrub, where they are practically invisible,

and rely on speed and concealment to evade predators. There is only one adult male per group, who functions as a scout and lookout when the troop moves. When they go down to a river bank to drink, he goes ahead and usually climbs a tree and looks around him for some time. When he finally descends to go to the water, the rest come out of the scrub to join him.

Langurs. The Indian langur monkey presents still another pattern of social organization (Jay, 1965). These animals are arboreal but spend much time on the ground during feeding. The males are only slightly larger than the females, and protection from predators is accomplished by each individual's running to the nearest tree. A dominance organization exists, but there is relatively little fighting among the males and little evidence of the spacing seen among baboons or rhesus monkeys. The troops usually include more females than males, and the surplus adult males live either singly or in male troops. If they attempt to enter a troop including females, they are driven off by the males of the troop. Each troop occupies a range with a central core area, but there is no guarding of territorial boundaries. Ordinarily the different troops simply avoid contact if their wanderings bring them close together.

Males show very little interest in the young, but the primary occupation of an adult female is that of being a mother, carrying the infant and grooming it. She also grooms older animals which are probably her own older offspring. Sexual behavior occurs only when the females are in estrus, or about one percent of their lifetimes. Sexual behavior is therefore not a predominant part of social activity. There is no sexual swelling, and females indicate receptivity by soliciting the males. Usually a temporary consortship is formed, often with the most dominant male in the troop, but a less dominant individual may be the sexual favorite. During consortship other males may harass the chosen male by threatening, but there is no overt fighting.

The adult males act as leaders of the troop, calling the members together with a whooping cry before initiating a movement. However, the most common and characteristic behavior patterns of a langur troop are eating, sleeping, and grooming, the last accounting for over 20 percent of their daylight hours. All these activities are performed in relaxed free associations, with little evidence of the more rigid social organization seen among baboons and rhesus monkeys.

Langurs observed by Sugiyama (1967) in a different part of India showed a different pattern. There were 44 troops, six of which were all-male groups. When a solitary male attacked the single male of a bisexual group, some of the females joined the attacking male and moved with him to a new locality. In another instance, when a male troop attacked the single male of a bisexual troop, the males began fighting among themselves until all the adult and juvenile males, with the exception of one male from the original attackers, were ejected from the troop. This male then went on to attack the infant animals.

Sugiyama also experimentally removed the adult male from a troop. The result was a series of attacks by the males from other bisexual troops, and one of these males killed the four infants of the original troop. The presence of a male is apparently essential to stable organization in this species, and extra males provide still greater stability. As with baboons, an unstable social situation leads to considerable mortality among infants, probably because they are physically unable to avoid an infuriated male. These observations show that social disorganization, with con-

sequent outbreaks of uncontrolled and injurious fighting, can occur under natural conditions as well as among captive animals. The reasons for the occurrence of disorganization in this particular area are not clear.

Anthropoids. Of the forest-living anthropoids, the orangs are still largely unstudied, mainly because they live in very small groups in inaccessible jungles. Chimpanzees are almost as difficult to study, and much of Nissen's original paper is a report of animals disappearing in the treetops. This species can best be studied by finding favorable locations where the animals will come out into the open, as Kortlandt (1962, 1963) did, or by living, like Goodall (1965), in an area until the chimpanzees become accustomed to the observer. Both observers saw chimpanzees using objects as tools under natural conditions, and Goodall reported that they occasionally capture and eat small animals.

Socially, the chimpanzees form less stable groups than do the monkeys described above. There may be groups of a few females with young, small groups of males only, and others of males and females without young, all living in the same area and occasionally meeting. Temporary groups of any combination of age and sex classes may be formed. Whether or not a more elaborate organization can be discovered will depend on the success of long-term observations in which the biological relationships of individuals can be determined.

Gorillas, in contrast to other primates, are strict vegetarians and have evolved in many ways parallel to the large, herbivorous, hoofed animals. They require large amounts of food and develop a rather paunchy appearance. Their large size and great strength are a protection against most predators. As with chimpanzees, the social groups are relatively small. A group usually consists of one or two males plus a few females and their offspring. The sex organs are very inconspicuous, and Schaller (1963) was able to observe sexual behavior only rarely. Mutual grooming is also rare.

There is little fighting within the group, but the animals respond readily to potentially dangerous predators by beating their chests, issuing threats, and sometimes by attacking. Schaller discovered that he could remain near a group and observe it by responding appropriately to social signals given by the gorillas. A direct stare is interpreted as a threat, and if an individual responds in this way he may be inviting an attack. However, if he looks off to one side, watching from the corner of his eye, the gorilla will respond in kind and eventually pass by in a different direction. While gorillas, with their large buttocks and manlike faces, look more human than most other primates do, they are ecologically and socially very far removed.

Communication. It is still too early to make any broad generalizations about primates, but certain tentative conclusions can be reached. Primates communicate by a large variety of signals, some that are visual, some vocal, and even some sounds produced in other ways, as in the chest beating of the gorillas. No nonhuman primate has yet been taught to imitate more than one or two words of human speech, and all seem to lack the motor apparatus necessary for modulating sounds to a high degree. Perhaps the most promising area for the study of communication is South America, whose monkeys exhibit a wide variety of vocal signals and show some evidence that their signals are modified by experience. However, there is no indication that any primate has the capacity for true speech. All nonhuman primate societies are af-

fectured by this deficiency, which greatly limits the capacity for cultural transmission as well as for direct communication.

Dominance and leadership. Dominance organization is very important in many primate societies, particularly among male baboons and macaques. Leadership, in the sense of an individual's determining the direction of movement in a group, varies from species to species and according to the social organization of the group. Among howling monkeys, movement from one tree to another is usually initiated by one of the males, whereas in a baboon troop the lead is often taken by one of the younger males, who are usually on the perimeter of the group, or by one of the older females. A similar situation is found among macaques, but the dominant male exercises some influence on the direction of movement. If for some reason he does not follow the lead taken by others, the group returns to him and starts out in another direction. To call the dominant male "the leader" is therefore an oversimplification; he apparently exercises only veto power over the direction of movement. The situation is quite different from that of the herd societies of most of the large hoofed mammals, where the oldest female in a well-organized group tends to take the lead, and males, if they belong to the group at all, follow in the rear, where predators are most likely to appear.

Occurrence of territoriality. From studies of the various species of primates in the field there have been only two reports of clear-cut defense of territorial boundaries, one on a species of *Callicebus* monkeys in South America, where groups regularly meet and threaten each other at certain border areas, and the other on vervet monkeys of Kenya, where groups defend small areas of approximately 20 to 40 acres within a larger home range. In a large number of other species each group inhabits a home range which usually overlaps that of other groups. Within the home range there is a core area which is more frequently visited than any other and is not overlapped. Most primates do not have permanent home sites, the closest approach to one being the sleeping trees of a baboon troop, which are frequently revisited. Chimpanzees and gorillas make new nests each night.

When troops of monkeys meet one another the usual reaction is mutual avoidance, though baboons using the same water holes are mutually tolerant, as described above. Fighting between troops of rhesus monkeys has been observed where artificial food supplies are provided, as in the Indian temples or in the artificially maintained colony on Santiago Island in Puerto Rico. Fighting here is occasioned by competition over food rather than territory, and this rarely if ever occurs in more natural conditions, where the food supply is widely distributed.

Both langurs and rhesus monkeys can be observed living in Indian cities as well as in the countryside. The animals are not molested by the human population, but Jay (1965) reports that the city-living members of both species are more tense and fight more than their country cousins do, and Southwick (1965) describes serious fights between rhesus troops feeding at the temples.

There is no system of territorial boundaries which would keep individuals apart in either of these species, and crowding forces individuals into closer contacts in which the behavior of mutual threat and avoidance, by which fighting is controlled under less dense conditions, becomes more difficult.

Territoriality, in the sense of permanent occupation of a specific area and defense of its boundaries, occurs relatively rarely among primates. The occurrence of ter-

territorial behavior in human beings is therefore a human invention rather than a basic primate trait; however, at this distance in time we cannot tell whether territoriality is a cultural or a biological invention. Its existence in precultural man is entirely conjectural. In contemporary human beings, we do know that behavior with respect to land varies a great deal and becomes most important in connection with agriculture and crowded city living. Perhaps early man showed some biological tendency to develop territoriality, but it may well be a completely cultural phenomenon which arose after definite resting and sleeping places were adopted.

Family organization. One of the reasons for studying primate social behavior is to search for the origin of human family organization. No long-lasting consortships between males and females have yet been discovered except among the gibbons, where the total group consists of one adult male, one female, and their immature offspring (Carpenter, 1964). The total group is so small because both males and females are highly aggressive toward other adults of like sex, with the result that the largest possible adult group is a mated pair. For the majority of larger primates the unit of social organization is the group of males, females, and young, within which an individual is born, grows up, and eventually dies. The males have no special relationship to their offspring and, indeed, in most cases it would be impossible to identify the biological father. However, where individuals are identified and records have been kept over long periods, as Sade (1965) found in the rhesus monkey colony of Santiago, there are long-lasting associations between a mother and her offspring and between the siblings born to her. These relationships can be measured by the relative amounts of grooming with different individuals, and in almost every case the major part of the grooming is done with related animals. This fact indicates that there is another type of social organization within the group beyond the dominance relationships of the males.

The total group, or *oikia* (Miyadi, 1964), is thus not composed of nuclear families nor is it strictly analogous to the human extended family, except in the sense that each monkey within the group develops some sort of social relationship with every other member. The nuclear family thus appears to be another human invention, whether cultural or biological.

Development. Developmental studies of the social behavior of primates are badly needed (Mason, 1965). Infant monkeys are obviously much more precocious than human infants, and the best detailed studies are those of Jay (1965) on the langur monkeys. She divides infantile development into two periods, based on changes in appearance and behavior.

The newborn langur has a dark coat that contrasts sharply with the white coats of the adults, and it is the object of much attention by both the mother and other females, who are allowed to handle and fondle it after it becomes dry. For the next three months the young langur is highly dependent on the mother and seldom leaves her arms. Between three and five months of age the coat color changes to that of the adult, signifying the end of the first infantile period. From this time until weaning at 12 to 15 months, the infant often leaves the mother, ranging 20 or 30 feet away and playing with other young animals. The adults react to it differently than before and threaten it if it disturbs them. Weaning is accomplished by active rejection on the part of the mother and marks the beginning of the juvenile period, which lasts until approximately four years of age in a male and three years in a female. The female

then passes through a "subadult" period lasting until approximately four years of age. Pregnancy follows the first estrus, usually occurring during the subadult period. After birth of the young, the female exhibits the typical behavior of an adult mother. For the males the subadult period is longer, lasting until six or seven years of age, when a male becomes full-sized. As a subadult, a male is subordinate to all adult males and participates only marginally in the troop life. He spends most of his day near the edge of the troop and approaches the adults only when they are resting. More fighting occurs between these animals than between adult males, and it is possible that the male troops are formed by groups of subadults that have grown up together. If a subadult remains in the troop he gradually becomes more dominant, first over females, and then beginning to contest for status with adult males.

The course of development is thus much more rapid in langurs than it is in human beings. The infants are much more precocious, being able to move on their own shortly after birth. We still do not have sufficient information to compare these periods of development with those in human infants, but it seems likely that the langur is born with motor development similar to that of a human infant near the end of the transition period, at approximately 12 to 14 months of age (Scott, 1963). There is no evidence as to when the process of primary socialization takes place, but presumably it occurs soon after birth.

Infant chimpanzees are somewhat more like human babies in their general development but are nevertheless more precocious (Hayes, 1951; Kellogg and Kellogg, 1933). They have been studied almost exclusively as hand-reared animals. Little attention has been paid to the process of primary socialization and the possible existence of critical periods for this process in these or other nonhuman primates.

Summary. The various species of primates show a wide variety of social behavior and organization strongly related to the ecology of each. Primates vary in size from small squirrel-like animals to the ponderous gorillas. While most of them are chiefly active in daylight, some are nocturnal. They are primarily inhabitants of tropical regions, where they live in a wide variety of habitats, ranging from open plains to tropical rain forests. The size of social groups is highly variable, as is their composition, but most groups are marked by a majority of females over males and long-continued associations between individuals.

For most species, only one or two extensive studies have been made, but where more than one social group has been studied it appears that considerable variation in social organization may exist within the same species, depending on the nature of the physical environment, the size of the groups, and the amount of disruptive and disorganizing pressures from the outside. Some of this variation undoubtedly reflects the bias and interests of the observers, and not until many studies have been made will the full complexity of social organization of any species be revealed.

In any case, we can no longer assume that other primates are closely similar to human beings and that we need only study them to obtain a picture of basic human social behavior. The primates as a group have diverged widely, evolving in different directions, and their members are as different as, say, dogs, cats, bears, and raccoons in the order Carnivora. Nor can we arrange primates on a linear scale of complexity, leading to the human condition. The other primates do not represent steps toward the evolution of human beings, but rather diverging pathways from a common ancestor.

BASIC HUMAN BEHAVIOR

Although the study of primate social behavior does not directly reveal basic human nature, it does give us fascinating clues to the possible expression of that nature in precultural man. Perhaps the most fascinating aspect of these clues is that they can lead only to speculative answers. Precultural man no longer exists, and his behavior can only be inferred from indirect lines of evidence.

One of these lines comes from anatomical structure. As indicated by fossil remains and bones, man's remote ancestors were, like himself, primarily adapted as plains-living primates, with erect carriage and bipedal locomotion. Their teeth, while stronger than those of modern man, were adapted for neither a strictly vegetarian nor a strictly carnivorous diet, but rather for an omnivorous one, and the same is true of modern man's digestive apparatus.

Another line of evidence comes from ecology and geographical distribution. Most primates tend to be tropical and tree-living, with the exception of man. The fossil evidence indicates that the ancestral humanoids lived on the plains of South Africa, a region which geological evidence shows has never been subjected to glaciation or very cold weather. We can infer that precultural man lived on warm, dry plains, perhaps using caves for shelter. With the invention of fire and clothing, man was able to move out of this environment and live in every known climate. In connection with this movement there occurred a certain amount of adaptive radiation, the results of which are still evident in the so-called human races. These changes, of course, came about in cultural rather than precultural man; it is difficult to believe that such inventions as fire and clothing could be transmitted without the use of language. The alternative hypothesis that precultural humanoids developed language and culture independently in several places is sometimes advanced but is not widely accepted.

Still another line of evidence is that provided by the behavior of modern man, and here we should point out that modern man is not biologically identical with his precultural ancestors and that large genetic changes have undoubtedly taken place. Also, in modern man we have the almost insoluble difficulty of separating cultural from biological phenomena. However, we can use the nonlingual primates as a sort of natural experiment providing evidence by which we can discriminate between those phenomena which are largely cultural and those which arise primarily out of man's basic sociobiological nature.

As with other primates, visual stimuli appear to be important in human sexual behavior. Man has not developed the colorful decoration of the mandrills nor the enormous sexual swelling of female chimpanzees, but the permanent development of the breasts in women and the differential development of body hair obviously serve to differentiate the two sexes from each other and from immature individuals, and they probably also act as sexual stimuli. As Kinsey (Kinsey *et al.*, 1953) has shown, visual stimulation is more important for males than for females.

Most of the primates show estrus periods in the females but little indication of seasonal breeding, a situation which might be expected in tropical animals. Human females are quite different in having no estrus periods and relatively little variation in sexual receptivity. Along with this, human sexual behavior is distinguished by long-continued associations between mated pairs. Whether sexual jealousy is produced by cultural or biological factors or whether it is simply the product of certain kinds

of environmental situations is difficult to determine. Fights over possession of females do occur regularly in the large herd animals, and it is possible that human ideas concerning sexual jealousy have been culturally derived from this source rather than from man's primary biological nature.

With respect to agonistic behavior, primates vary a great deal, from the howling monkeys, which express most of this behavior as vocalization, to the gibbons, which are highly intolerant. Human beings appear to be most like baboons in their ready tendency to form male groups for defense and attack, but the human expression of agonistic behavior has a wider range and is not simply defense against predators. In baboons there is an enormous difference in size and strength between males and females, and aggressive behavior is exhibited much more by males than by females. The average differences in size and in muscular strength between human males and females indicate that there was originally some, but not an extreme, division of labor in agonistic behavior between the sexes.

Allelomimetic behavior is very strongly exhibited in modern human beings. In their tendency to form large and long-lasting groups, people appear to be basically more like baboons than like chimpanzees, which form smaller and less permanent aggregations.

With respect to epimeletic behavior, human beings are like all other primates in normally having one offspring at a time and maintaining long-continued associations with them. Human males appear to be more like those of rhesus monkeys or baboons in showing an interest in the young, rather than like langur males who are indifferent to them. In keeping with the emphasis on epimeletic behavior, *et*-epimeletic (care-soliciting) behavior is very prominent among human beings and lasts well beyond infancy. Assuming that under precultural conditions the young did not leave their social group as they grew older, we might speculate that the precultural young became essentially independent at about seven or eight years of age, when they were able to gather their own food and to flee to the group for safety.

With respect to the minor systems of social behavior, an outstanding human characteristic is a tendency toward investigative behavior. Human beings are proverbially curious, and though they emphasize visual investigation, they are likely to supplement it with handling, smelling, and tasting.

In ingestive behavior, modern men are omnivorous but can subsist on either purely vegetable or purely animal diets with the aid of cooking. Human beings are still best adapted to existence in mild climates, but they live in a great variety of other climates where shelter-seeking behavior becomes very important. Finally, human beings are much interested in eliminative behavior, and toilet training is a prominent part of many cultures. Developmental data show that human infants begin to be capable of effective bladder and bowel control at about 18 months, after they begin to be capable of independent locomotion. Other primates show little or no behavior connected with the control of elimination, as might be expected in animals which have no permanent home sites. The difficulties of human toilet training suggest that the adoption of such sites may have come relatively late in human evolution.

Thus we find all the major systems of social behavior well developed in human beings, and we can assume that human beings have the needs to express these behaviors in proportion to the amount of social stimulation they receive and to their own biological constitutions. Here we should remember that an outstanding characteristic of human populations is variation, with the result that one individual may differ a

great deal from another in his basic biological and social makeup. Consequently, in any human population there is a great deal of genetic as well as behavioral flexibility and adaptability.

From the social viewpoint, human beings are peculiar primates in many ways, having pursued a special line of evolution divergent from that of the others. Counterparts for most of these divergences can be found in different primates, however, and the essentially human part of our behavior results from a peculiar combination of capacities rather than from completely new characteristics. Defining the basic biosocial nature of man is an important task in that it defines the limits of satisfactory adaptation to cultural variation. The ideal culture must satisfy not only basic general human characteristics but also the varying genetic natures of the majority of individuals in human populations.

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Author Index

Author Index

- Abel, T. M., 371, 384, 391, 591, 603
Abelson, R., 109, 190, 200
Aberle, D. F., 379, 387, 391, 423, 448, 466, 479, 492, 493
Abraham, J. J., 379, 392
Abrahams, R. D., 384, 392
Ackerknecht, E. H., 378, 382, 392
Ackerson, L., 217, 273
Adams, J. K., 7, 88
Adams, J. S., 157, 169, 185
Adams, P. A., 7, 88
Adorno, T. W., 374, 392, 417, 449, 454, 493, 550, 589, 603
Affinito, M., 187
Aichorn, A., 300, 319
Aikman, L., 96
Ainsworth, M., 404
Akers, E. R., 536, 603
Alexander, F., 421, 464, 493
Alexander, T., 359, 392
Allee, W. C., 3, 4, 88, 629, 689
Allen, V. L., 160, 176, 185
Allport, F. H., 3-6, 88, 103, 161, 185, 289, 298, 319, 535, 541, 545, 550, 553, 603
Allport, G. W., 181, 334, 392, 437, 446, 453, 493, 515, 538, 539, 554, 583, 603
Almond, G. A., 375, 392, 422, 439, 440, 445, 456, 477, 493, 593-595, 603
Alper, T. G., 4-6, 100
Altman, I., 103, 125, 184, 185, 197
Altmann, S. A., 639, 642
Amidjaja, I. R., 135, 185
Anastasi, A., 358, 392, 464, 493
Anderson, F., 372, 392
Anderson, N. H., 65, 66, 76, 88
Anderson, R., 359, 392
Anderson, S., 262, 280
Angell, R., 324, 399, 453, 497, 500
Anthony, A. A., 349, 362, 416
Anthony, E., 178, 200
Archibald, K., 94
Arendt, H., 542, 603
Arensberg, C. M., 123, 194
Argyle, M., 150, 198, 534, 603
Argyris, C., 293, 319
Arkoff, A., 50, 60, 100, 131, 133, 136, 204
Aronson, E., 190
Aronson, L. R., 620, 641
Arrow, K. J., 34, 60, 61, 88
Ariowood, A. J., 50, 94, 131-136, 195
As, D., 84, 92, 183, 191
Asch, S. E., 9, 25, 27, 88, 103, 165, 169, 170, 174, 180, 185, 206, 273, 421, 534, 553, 580, 603
Atelsek, F., 122, 200
Atkins, J., 338, 415
Atkinson, J. W., 368, 406, 437, 493, 501
Augier, R., 588, 609
Ausubel, D. P., 371, 392
Axelrod, S., 394, 400, 403, 409
Back, K., 120, 122-124, 185, 191
Backman, C. W., 103, 160, 201, 213, 281
Bacon, F., 594, 603
Bacon, M. K., 362-364, 392
Bacon, W. F., 621, 625, 639
Baer, D. M., 169, 192

- Baerwald, J., 604
 Bagehot, W., 550, 570, 603
 Bailey, F. L., 325, 392
 Bainton, R. H., 592, 597, 603
 Bales, R. F., 15, 17, 18, 88, 103, 114, 116, 125, 160, 186, 211, 212, 232, 239, 253, 273, 280, 423, 503
 Ballachey, E. L., 220, 248, 259, 279, 586, 606
 Baltzell, E. D., 312, 319
 Bandura, A., 3, 88, 161, 169, 174, 186, 580, 603
 Banghart, F. W., 68, 88
 Banks, A. S., 477, 493
 Barker, R. G., 86, 88, 279
 Barnlund, D. C., 67, 73, 89
 Bainouw, V., 352, 353, 392, 423, 493
 Barry, H. H., 362–364, 392
 Bartlett, F. C., 334, 392
 Bartlett, M. S., 566, 603
 Bass, B. M., 41, 42, 46, 77, 84, 89, 92, 93, 97, 103, 160, 182, 183, 186, 188, 199, 216, 220, 222, 223, 251, 274, 275, 278
 Bates, A. P., 109, 186
 Bates, F. L., 109, 186
 Bateson, G., 327, 351, 355, 358, 360, 365, 369, 380, 392, 419, 423, 425, 431, 433, 442, 449–451, 453, 457, 458, 460, 465, 493, 504
 Bateson, N., 82–84, 89, 179, 201
 Bauer, R. A., 176, 190, 374, 392, 449, 493
 Bavelas, A., 52, 89, 103, 106, 137, 138, 140, 150, 186, 228, 274
 Baxter, J. C., 170, 186
 Beach, F. A., 326, 393, 398, 639
 Beaglehole, E., 381, 393, 453, 469, 493
 Beal, G. M., 176, 186
 Beasley, J., 63, 73, 89
 Beck, S., 342, 393
 Becker, S. W., 175, 186
 Becker, W. C., 311, 320
 Beer, M., 219, 274
 Beg, M. A., 642
 Behner, A., 3, 91
 Behringer, R. D., 23, 101
 Beier, H., 374, 402, 422, 444, 453, 457, 460, 473, 483, 486, 487, 499
 Bell, G. B., 225, 247, 274
 Bellingrath, G. C., 216–218, 222, 274
 Bellows, H. A., 579, 604
 Belo, J., 325, 393, 450, 494
 Bem, D. J., 79, 81, 89, 100, 610
 Benedict, R., 361, 363, 366, 367, 393, 419, 424, 438, 440, 442, 444, 449, 467, 469, 494
 Benjamin, I., 22, 94
 Benjamin, L., 279
 Bennett, E. B., 84, 89, 182, 183, 187
 Bennett, G. B., 261, 274
 Bennis, W. G., 171, 187, 189
 Berelson, B., 310, 320
 Berg, I. A., 188
 Bergum, B. O., 3, 89
 Berkowitz, L., 31, 33, 89, 92, 123, 124, 150, 179, 184, 185, 187, 190, 193, 201, 276, 281
 Berkowitz, N., 187
 Berlyne, D. E., 336, 393
 Berndt, C. H., 382, 393
 Berne, E., 35
 Benreuter, R. G., 220, 221, 222
 Berreman, G. D., 370, 384, 393
 Berry, P. C., 72, 73, 99
 Bettelheim, B., 161, 187, 349, 393, 449, 494, 590, 604
 Bevnor, E. D., 597, 598, 604
 Biddle, B. J., 102, 187
 Bierstedt, R., 160, 187
 Biesheuvel, S., 362, 385, 393
 Billig, O., 341, 393
 Binet, A., 343, 393
 Bion, W. R., 161, 187
 Birdwhistell, R. L., 335, 393
 Bittle, W. E., 588, 604
 Bjerstedt, A., 123, 187
 Blake, J., 315, 320
 Blake, R. R., 34, 46, 62, 89, 93, 96, 173, 174, 176, 187, 189, 191, 196, 200
 Blau, P. M., 103, 160, 162, 165, 187
 Bleuler, M., 341, 359, 393
 Bleuler, R., 341, 359, 393
 Bliss, E. L., 412, 639
 Bloch, B. L., 9, 96
 Block, C. H., 72, 73, 99
 Block, J., 179, 187
 Blood, R. O., Jr., 159, 187
 Bloom, B. S., 489, 505
 Blum, R., 388, 393
 Blumer, H., 507, 520, 543, 550, 554, 591, 604
 Boas, F., 330, 336, 337, 354, 394, 419
 Bogatyrev, P., 403
 Bohannon, P., 390, 394
 Boisclair, C., 397
 Boisen, A., 589, 604
 Boissonnade, P., 590, 604
 Bond, J. R., 51, 89, 135, 187
 Bondurant, J. V., 516, 604
 Boomer, D. S., 9, 90
 Borg, W. R., 220, 274
 Borgatta, E. F., 119, 186, 196, 211, 274

- Bos, M. C., 26, 90
 Bovard, F. W., Jr., 123, 187
 Bowes, A. E., 150, 193
 Boyer, B., 335, 365, 378, 383, 394
 Bradburn, N. M., 368, 394
 Bradford, D. L., 97
 Brant, C., 387, 394
 Brayfield, A. H., 94
 Breer, P. E., 494
 Biehm, J. W., 168, 181, 188, 200
 Bruckner, R., 427, 484, 494
 Brigante, T. R., 171, 188
 Brum, O. G., Jr., 176, 188, 297, 320, 471, 494
 Brimton, C., 588, 604
 Brock, T. C., 177, 188
 Bronfenbrenner, U., 311, 320, 462, 466, 494
 Bronson, F. H., 613, 625, 639, 642
 Brown, P., 575, 576
 Brown, R., 337, 394
 Brown, R. W., 7, 78–82, 86, 90, 312, 320, 507, 510, 524, 527, 534, 537, 541, 581, 604
 Bruce, H. M., 529, 608
 Bruce, J. A., 529, 604
 Bruner, E. M., 357, 394
 Bruner, J. S., 340, 341, 394, 400, 453, 493
 Brunswik, E., 50, 90, 339, 394, 430, 494
 Bryson, L., 502
 Buchanan, J. M., 37, 58–60, 88, 90
 Buchanan, W., 438, 446, 455, 494
 Buckhout, R., 274
 Bunker, H. A., 499
 Bunzel, R., 355, 394
 Burdick, H. A., 175, 188
 Burgess, E. W., 498, 510, 543, 608
 Burling, R., 338, 394
 Burnes, A. J., 175, 188
 Burns, T., 125, 188
 Butt, R. B., 81, 100
 Burton, A., 4, 90
 Burton, R. V., 350, 362, 394
 Buttt, H. E., 177, 188, 232, 276
 Bush, R. R., 54, 93, 608
 Bushnell, J., 348, 394
 Bustamante, J. A., 377, 394
 Butler, J., 84, 95
 Caldwell, B. M., 311, 320
 Caldwell, O. W., 216, 222, 274
 Calhoun, J. B., 529, 604
 Campbell, D. T., 69, 72, 73, 94, 123, 161, 176, 188, 189, 195, 225, 278, 333–335, 402, 412, 421, 494
 Campbell, J., 7, 91
 Campbell, J. D., 307, 320
 Canetti, E., 516, 521, 532, 604
 Cannon, W. B., 332, 394
 Canon, L. K., 25, 90
 Cantril, H., 435, 437–440, 446, 455, 456, 494, 521, 552, 578, 586–589, 591, 598, 601, 604
 Caplow, T., 60, 90, 128–132, 136, 188, 189
 Carlson, H. B., 344, 394
 Carment, D. W., 175, 188
 Carmichael, L., 502
 Carmichael, S., 528
 Carney, R. E., 343, 394
 Carothers, J. C., 340, 394
 Carpenter, C. R., 616, 630, 635, 639
 Carpenter, E., 393
 Carroll, J., 175, 186
 Carstairs, G. M., 358, 395, 454, 494
 Carter, J. H., 211, 214, 250, 274
 Carter, L., 194, 215, 223, 229, 230, 232, 246, 247, 266, 274, 275, 278
 Carterette, T., 341, 362, 389, 401
 Carthy, J. D., 640
 Cartwright, D., 92, 99, 103, 105–109, 119–122, 125, 160, 165, 166, 176, 189, 191, 192, 193, 204, 251, 274, 276, 277
 Carzo, R., Jr., 19, 90
 Cattell, R. B., 114–116, 154, 189, 213, 218–224, 237, 242–244, 257, 274, 275, 447, 494
 Caudill, W., 366, 371, 395, 446, 453, 454, 494
 Centers, R., 159, 189
 Cervin, V., 189
 Chabot, J., 113, 189
 Chafetz, M. E., 388, 395
 Chance, N. A., 377, 408
 Chandler, P. J., 191
 Chanduri, A. K. R., 348, 395
 Chaney, M. V., 135, 189, 251, 275
 Chapman, L. H., 123, 189
 Charters, W. W., Jr., 174, 189
 Chertkoff, J., 131, 135, 136, 189
 Chesky, J., 453, 499
 Child, I. L., 324, 362–364, 382, 392, 416, 433, 434, 465, 477, 506
 Chowdrhy, K., 224, 225, 275
 Christian, J. J., 529, 604
 Christie, L. S., 19, 20, 53, 90, 96, 189, 197, 199
 Christner, C. A., 93
 Chun, N., 47, 100
 Clark, E. T., 310, 320
 Clark, R. A., 368, 406
 Clark, S., 529, 604

- Clausen, J. A., 498
 Clemente, C. D., 640
 Cleven, W. A., 264, 275
 Cloward, R. A., 300, 320
 Cloyd, J. S., 109, 186
 Coale, A. J., 315, 320
 Coch, L., 84, 90, 182, 183, 189, 261, 275
 Cofer, C. N., 32, 98
 Coffin, T. E., 9, 90
 Cohen, A. K., 301, 320, 493
 Cohen, A. M., 189
 Cohen, A. R., 158, 171, 181, 188, 189, 204
 Cohen, D., 73, 90
 Cohen, E. A., 590, 604
 Cohen, J., 539, 604
 Cohen, M., 24, 94
 Cohen, Y., 347, 365, 395, 420, 495
 Coleman, J. F., 176, 189
 Coleman, J. S., 566, 604
 Collias, M. E., 395
 Collier, J., 372, 387, 395
 Collins, B. E., 30, 90, 103, 116–118, 121, 122,
 148, 160, 181, 184, 190, 209, 249, 275
 Compton, B., 607
 Comrey, A. L., 75, 76, 90
 Confucius, 205
 Conklin, H. C., 336, 338, 395
 Contry, J. C., 606
 Converse, P. E., 103, 199
 Cooley, C. H., 102, 209, 421, 570, 604
 Coon, C. S., 327, 395
 Coons, A. E., 276, 277
 Cooper, J. B., 213, 275
 Cooper, J. M., 381, 395
 Copilowish, I. M., 104, 190
 Couch, A. S., 229, 275, 278
 Couch, D. M., 194
 Coult, A., 389, 395
 Cox, C. M., 218, 275
 Cox, D., 176, 190, 529, 605
 Cowley, W. H., 218, 275
 Craig, T., 572, 609
 Craik, G. L., 537, 542, 605
 Crannell, C. W., 147, 148, 198
 Crawford, M. P., 625, 639
 Criswell, J. H., 211, 275
 Cromwell, R. L., 11, 30, 91
 Crossman, R., 592, 605
 Crowell, D. C., 204
 Crowne, D. P., 5, 93
 Crozier, M., 425, 470, 475, 495
 Crutchfield, R. S., 40, 175, 176, 185, 190,
 220, 248, 259, 279, 586, 606
 Curti, M. W., 331, 395
 Dahl, R. A., 160, 190
 Dahlke, A. E., 606
 Dai, B., 384, 395, 427, 495
 D'Andrade, R. G., 349, 356, 357, 362, 395,
 413, 416, 453, 478, 479, 495, 505
 Daniels, L. R., 179, 187, 190
 Darley, J. G., 123, 190
 Darling, F. F., 639
 Darwin, C., 628
 Dashiell, J. F., 5, 67, 75, 91, 103, 190, 262, 275
 Dauntton, E., 336, 411
 Davidson, W., 341, 393
 Davie, M. R., 329, 413
 Davies, J. C., 536, 610
 Davis, A., 427, 462, 495
 Davis, A. K., 493
 Davis, H. L., 90
 Davis, J. A., 190
 Davis, J. H., 21, 56, 57, 62, 70, 74, 87, 91, 97
 Davis, K., 287, 293, 297, 315, 320, 561, 584,
 605
 Davitz, D., 95
 Dawson, J., 382, 395
 Deardorff, M. H., 372, 395
 deCharms, R., 32, 94
 DeFleur, M. L., 539, 605
 DeLangen, S. D., 414
 Dembo, T., 86, 88
 de Monchaux, C., 98
 de Montmollin, G., 66, 68, 77, 97
 Denney, R., 354, 410
 Dennis, W., 331, 339, 343, 395, 396, 411
 de Reuck, A. V. S., 415
 De Ridder, J. C., 444, 495
 Deskin, G., 75, 90
 Deutsch, M., 15, 21, 36, 38, 39, 43, 46, 91,
 170, 190, 582, 605
 Deutschberger, P., 249, 275
 Devereux, G., 325, 327, 353, 356, 371, 378,
 382, 389, 396, 427, 458, 468, 477, 478,
 485, 495
 DeVinney, L. C., 203, 322
 DeVore, I., 631, 639–641
 DeVos, G. A., 326, 335, 341, 345, 351, 359,
 362, 371, 375, 384, 389–391, 395, 396, 401,
 408, 427, 453, 495
 DeVyver, F. T., 322
 Dewey, J., 570, 605
 Dicks, H. V., 419, 432, 443, 449, 454, 458,
 460, 472, 484–487, 495
 Dickson, W. J., 103, 118, 182, 200
 Dien, D., 204
 Dill, W. R., 150, 152, 153, 193
 Dittes, J. E., 176, 190, 192

- Di Vesta, F. J. , 9, 91, 176, 190
Dobzhansky, T. G., 290, 320
Dohrman, H. T. , 594, 605
Dollard, J., 3, 96, 161, 169, 198, 291, 321,
465, 495, 508, 549, 550, 605
Doob, L. W. , 370, 397, 508, 605
Drake, R. M. , 218, 275
Dreger, R. M. , 344, 397
Driscoll, J. M. , 17, 91
Dubin, R. , 281, 300, 320
Dublin, L. I., 389, 397
DuBois, C., 341, 358, 359, 375, 397, 443, 449,
453, 460, 491, 495, 499
Dubreuil, G. , 397
Duyker, H. C. J., 98, 423, 424, 427, 456, 482,
495
Dundes, A., 397
Dunkerley, M. D., 217, 275
Dunnette, M. D., 69, 72, 73, 91
Dunteman, G. , 41, 46, 89
Durkheim, E. , 102, 289, 296, 301, 302, 310,
320, 345, 389, 390, 397, 421
Dymond, R., 225
- Eaton, J. W., 377, 397
Eber, H. W., 29, 96
Ebling, F. J., 640
Edie, L. C. , 531, 605
Efron, D. , 325, 397
Egerman, K. , 117, 190, 192
Eggan, D. , 356, 397, 453, 478, 495
Eibl-Eibesfeldt, I., 328, 397
Eisenstadt, S. N., 288, 320, 391, 397, 470, 495
Eisman, B., 120, 190
Eissler, R. S., 401, 411
Elkins, S., 397, 427, 495
Ellenberger, H., 408
Ellertson, N., 201
Ellis, N. R. , 91
Elms, A. , 181, 190
Emerson, A. E., 629
Emerson, R. M., 105, 123, 156, 160, 162, 165,
174, 190, 191
Epling, P. J. , 338, 411
Erikson, E. H., 356, 357, 362, 397, 421, 425,
431, 432, 449–451, 457, 458, 460, 464,
468, 470, 473, 476, 480, 484–486, 490, 495,
496
Essien-Udom, E. U., 597, 599, 605
Etkin, W., 639
Evan, W. M. , 191
Evans, F. J. , 178, 179, 199
Evans, J. W., 11, 98
- Evans-Pritchard, E. E. , 398
Exline, R. V. , 35, 42, 51, 91, 122, 191, 194,
225, 226, 275, 276
Eysenck, H. J. , 291, 320, 447, 496
- Fabrizius, E. , 617, 639
Falkenburg, D. R., Jr., 177, 188
Farber, M. L., 458, 496
Faris, R. E. L., 466, 496, 610
Farmer, J. , 574, 576
Farnsworth, P. R., 3, 8, 91
Farrell, F. M., 29, 97
Faucheux, C., 20, 69, 91
Fauquier, W., 222, 275
Faust, W. L. , 56, 65, 66, 68, 74, 91, 99, 262,
282
Feather, N. T., 105, 106, 108, 191
Feldman, A. S. , 305, 319, 322
Fenichel, O., 351, 397, 430, 496
Fenton, J. M. , 589, 605
Fenton, W. N. , 395
Ferenczi, S., 353, 398
Ferguson, C. K. , 46, 84, 91
Fernandez-Marina, R. , 366, 398
Ferri, E., 542
Feshbach, N. , 520, 605
Feshbach, S. , 520, 605
Festunger, L. , 25, 27, 83, 86, 91, 92, 103, 123,
124, 137, 165–167, 171, 181, 184, 191,
194, 228, 275, 336, 348, 370, 373, 398, 592,
605
Feuer, L. S., 561, 605
Fiedler, F. E., 226, 232, 263, 264, 275–277
Field, M. J. , 377, 398
Fink, C. F., 22, 56–58, 71, 80, 99
Finkelstein, L., 502
Firth, R., 356, 398
Fischer, J. L. , 335, 336, 355, 367, 378, 383, 398
Fishbein, M., 199
Fisher, A. E. , 622, 624, 639, 640
Flament, C. , 106, 108, 180, 191
Flanagan, J. C., 246, 253, 276, 281
Flanzbaum, S., 156, 197
Fleishman, E. A. , 224, 232, 233, 237, 241, 276
Flint, A. W., 89
Flugel, J. C., 508, 605
Foley, J. F., 358, 392
Foley, J. P., Jr., 464, 493
Foote, R. S., 531, 605
Ford, C. S., 326, 398
Ford, E. B., 414
Form, W. H., 288, 307, 321
Forsyth, E. , 111, 191

- Foss, B. M., 401
 Fouraker, L. E., 45, 49, 59, 92, 99
 Fouriezios, N. T., 40, 41, 92
 Fowler, F. J., Jr., 97
 Fox, D. J., 73, 76, 92, 95
 Fox, V., 536, 603
 Fraas, L. A., 178, 192
 Frake, C. O., 336–338, 398
 Francis, J. L., 386, 403
 Frank, J. D., 179, 191, 373, 398, 586, 605
 Frankl, V. E., 590, 605
 Frazer, J. G., 348, 398
 Frazier, E. F., 365, 398, 588, 605
 Freed, A. M., 174, 191
 Freedman, J. L., 17, 23, 25, 92
 French, D., 337, 338, 398, 421, 496
 French, J. R. P., Jr., 33, 36, 84, 90, 92, 125, 156, 160, 165, 166, 168, 170, 171, 176, 179, 182, 183, 191, 192, 200, 209, 213, 261, 275, 276, 581, 605
 French, R. L., 247, 274
 Frenkel-Brunswik, E., 392, 430, 447, 493, 496, 603
 Freud, A., 401, 411, 430, 468, 496, 501
 Freud, S., 161, 191, 210, 253, 254, 276, 296, 300, 320, 327, 345, 347, 350, 352, 353, 357, 383, 398, 421, 430, 457, 464, 466, 496, 543, 546–548, 553, 554, 567, 568, 605
 Fried, J., 377, 408, 416
 Friedman, G. A. A., 368, 406
 Frijda, N. H., 423, 424, 427, 456, 482, 495
 Fromm, E., 254, 255, 276, 346, 374, 398, 421, 425, 432, 449, 457, 464–466, 470, 474, 480, 481, 484, 485, 496, 497, 542, 549, 550, 605
 Froom, J. E., 529, 606
 Fryder, D. H., 282
 Fuller, J. L., 620, 627, 642

 Gage, N. L., 225, 276
 Gagné, R. M., 26, 92
 Gager, E. L., 89
 Galanter, E., 608
 Galdston, L., 409
 Gallo, P. S., 46, 92, 176, 200, 226, 276
 Gamson, W. A., 60, 92, 127–130, 132, 134, 136, 137, 192
 Gardner, E., 123, 192
 Garn, S., 333, 398
 Garvin, P. L., 399
 Gaudet, H., 604
 Gazis, D. C., 531, 605
 Gebel, A. S., 274
 Geber, M., 332, 361, 398
 Gebhard, P. H., 640
 Geertz, C., 367, 399
 Geis, G. L., 588, 604
 Gerhard, H. B., 8, 36, 91, 94, 123, 165, 170, 174, 176, 190–192, 194, 249, 277
 Gesell, A. L., 331
 Gewirtz, J. L., 169, 192
 Ghiselli, E. E., 28, 75, 92, 100
 Gibb, C. A., 211, 212, 217, 218, 237, 243, 244, 246, 247, 255, 257, 265, 270, 277
 Gibb, J. R., 18, 92
 Gilbert, G., 548, 605
 Gilchrist, J. C., 16, 18, 92, 98, 149, 192, 202, 222, 275
 Gillen, F. J., 326, 412
 Gillespie, J. M., 446, 493
 Gillin, J., 341, 369, 393, 399
 Gillin, J. P., 450, 497
 Gilmore, R., 223, 279
 Gimsberg, M., 423, 497
 Gist, N. P., 539, 608
 Gladwin, T., 325, 337, 341, 376, 388, 393, 395, 398, 399, 402, 415, 455, 497
 Glanzer, M., 113, 140, 146, 192
 Glaser, R., 113, 117, 140, 146, 192
 Glazer, N., 354, 410, 561, 605, 609
 Gluckman, M., 365, 399
 Godfrey, E. P., 264, 277
 Goding, E. F., 99
 Goffman, E., 309, 321
 Goldberg, S. C., 192
 Goldfrank, E. S., 325, 399, 442, 463, 468, 497
 Goldhamer, H., 167, 192
 Goldman, M., 43, 70, 71, 92, 93, 122, 178, 192, 194
 Goldman-Eisler, F., 361, 399
 Gollob, H. F., 176, 192
 Goodacre, D. M., 123, 193
 Goodall, J., 633, 640
 Goode, W. J., 304, 321
 Goodenough, F. L., 222, 277, 358, 399
 Goodenough, W. H., 337, 399
 Goranson, R. E., 179, 193
 Gordon, J. E., 9, 97
 Gordon, L. V., 219, 221, 222, 277
 Gorer, G., 361, 399, 419, 423, 433, 443, 444, 449, 458, 460–462, 465, 486, 488, 490, 497, 504
 Gottlieb, D., 390, 399
 Gottschalk, L., 324, 399, 453, 497, 500
 Gough, H. G., 28, 359, 399, 400
 Gould, J., 604

- Gouldner, A. W., 179, 193, 277, 279, 295, 321
 Gowin, E. B., 216, 277
 Goy, R. W., 624, 642
 Gray, P. H., 619, 640
 Greenfield, P. M., 340, 394, 400
 Greenspoon, J., 161, 169, 193
 Green, F. L., 223, 279
 Gregory, D., 201
 Grinker, R. R., 377, 400
 Grinnell, G. B., 329, 400
 Grollman, E. A., 348, 400
 Gross, N., 123, 190
 Grossack, M. M., 193
 Grosset, D., 123, 193, 580, 605
 Grusky, O., 226, 277
 Guetzkow, H., 16, 19, 28, 29, 40, 41, 88, 92, 93, 103, 116–118, 121–123, 148, 150–154, 160, 184, 190, 193, 197, 220, 249, 275, 277, 603
 Guhl, A. M., 640
 Guilford, J. P., 220, 222
 Gulick, J., 371, 400
 Gullickson, G. R., 136, 204
 Gumperz, J. J., 400
 Gunn, R. L., 158, 196
 Gurnee, H., 26, 62, 63, 68, 73, 93
 Gurvitch, G., 282
 Gussow, Z., 379, 400

 Haddon, A. C., 333, 400
 Haefner, D., 194, 278
 Hagen, E. E., 368, 370, 400, 423, 497
 Hauman, F. S., 261, 262, 277
 Haure, M., 222, 279
 Hall, D. M., 264, 277
 Hall, E. J., 62, 93
 Hall, E. T., Jr., 325, 328, 329, 335, 400, 518, 520, 529, 605
 Hall, H. E., 225, 274
 Hall, J. K., 464, 499
 Hall, K. R. L., 631, 640
 Hall, R., 201
 Hall, R. L., 49, 93, 98, 117, 182, 193
 Hallowell, A. I., 323, 330, 341, 369, 371, 382, 386, 389, 400, 401, 427, 442, 443, 449, 453, 497
 Halpin, A. W., 230–232, 235–237, 258, 277
 Hamblin, R. L., 32, 33, 86, 93
 Hamilton, C. E., 219, 277
 Hamilton, M., 377, 401
 Hammel, E. A., 337, 401, 415
 Hammond, L. K., 43, 93
 Hanawalt, N. G., 218–222, 277, 281
 Hanfmann, E., 157, 193, 221, 249, 277, 374, 402, 422, 444, 453, 457, 460, 473, 483, 486, 487, 499
 Hansen, E. W., 622, 640
 Harary, F., 103, 105–111, 119, 156, 176, 188, 193, 199
 Haravey, F., 182, 183, 199
 Harding, J. S., 405
 Hardy, A. G., 414
 Hardy, K. R., 170, 193
 Hare, A. P., 74, 93, 103, 125, 184, 186, 193
 Haring, D. G., 409, 497
 Harlow, F. H., 529, 606
 Harlow, H., 640
 Harlow, H. F., 326, 393, 401, 622, 640
 Harlow, M. K., 622, 640
 Harner, M. J., 387, 388, 401
 Harper, E. B., 380, 401
 Harris, E. F., 232, 233, 241, 276
 Harris, R., 179, 187
 Harsanyi, J. C., 160, 193
 Hartley, E. L., 90, 95, 186, 195, 213, 277, 279, 282, 320, 406, 416, 494
 Hartley, R. E., 213, 277
 Hartmann, H., 327, 383, 401, 411, 429, 430, 497
 Harvey, A. B., 31, 89
 Hatt, P. K., 321
 Haudricourt, A. G., 354, 401
 Hauser, P. M., 321
 Haussmann, G. E., 527
 Havemann, E., 310, 321
 Havighurst, R. J., 339, 340, 401, 427, 462, 495
 Hawkins, W. C., 274
 Hayes, C., 636, 640
 Hays, D. G., 54, 93
 Haythorn, W., 41, 93, 125, 194, 223, 224, 243–246, 262, 274, 278
 Hecker, J. F. K., 566, 587, 606
 Heer, D. M., 159, 194
 Heider, F., 7, 93, 104–109, 165, 166, 173, 175, 194
 Heine, R. W., 394, 404
 Hemick, C., 460, 497
 Hemmann, P., 402, 404, 408, 413
 Heintz, R. K., 280
 Heise, G. A., 19, 20, 93, 148, 149, 194
 Helm, J., 341, 362, 389, 396, 401
 Hemphill, J. K., 16, 17, 93, 162, 199, 214, 215, 230, 235, 237, 242, 243, 251, 255, 278, 280
 Henderson, E. M., 395
 Henderson, N., 344, 394
 Hendin, H., 391, 401

- Henry, J., 326, 358, 401, 402, 453, 497
 Henry, W. E., 220, 278, 359, 402, 447, 453, 454, 498
 Henry, Z., 358, 402, 453, 497
 Herbst, P. G., 156, 158, 159, 194
 Herman, R., 531, 605
 Herrold, K., 95
 Hersher, L., 619, 640
 Herskovits, M. J., 333–335, 369, 402, 410, 412
 Hertz, F., 427, 498
 Herzog, H., 604
 Heyns, R. W., 122, 123, 197
 Hill, A. H., 606
 Hinds, W., 80
 Hites, R. W., 225, 278
 Hoch, P. H., 401
 Hochbaum, G. M., 9, 93, 176, 194
 Hofeller, M. A., 97
 Hoffer, E., 591, 593, 606
 Hoffman, L. R., 221, 278
 Hoffman, L. W., 320, 322
 Hoffman, M. L., 320, 322
 Hoffman, P. J., 137, 194
 Hoffman, S., 596, 606
 Holstadter, R., 449, 498
 Hofstatter, P. R., 544, 606
 Holnshed, R., 542, 606
 Hollander, E. P., 9, 93, 160, 168, 176, 194, 204, 211, 223, 224, 226, 252, 269, 278
 Hollingshead, A. B., 310, 321, 378, 381, 410
 Holst, E. von, 625, 641
 Holt, R., 404
 Holtzman, W. H., 219, 278
 Homans, G. C., 103, 113, 114, 116, 118, 119, 122, 162, 165, 169, 184, 194, 200, 295, 321
 Honigmann, J. J., 332, 356, 361, 366, 402, 420, 423, 453, 468, 498, 505
 Hooton, E., 630, 640
 Hoover, C. B., 591, 606
 Horkheimer, M., 496
 Horney, K., 366, 402
 Horowitz, M. W., 105, 194
 Horowitz, W., 274
 Horsfall, A. B., 123, 194
 Horton, D. L., 5, 93
 Horwitz, M., 122, 194
 Hoseltz, B. F., 503
 Hovland, C. I., 9, 38, 93, 176, 177, 180, 194, 195, 200, 545, 549, 606
 Howard, E., 640
 Hoyt, D., 219, 282
 Hsu, F. L. K., 371, 374, 384, 391, 395, 402, 420, 423, 425, 444, 453, 460, 481, 482, 484, 492, 494, 495, 498, 499, 505, 506
 Hudgins, B. B., 63, 68, 93
 Hughes, C. C., 382, 385, 402, 405
 Hughes, E. C., 474, 498
 Hughes, J. H., 383, 405
 Hughes, L. S., 358, 407
 Hull, C. L., 336, 402
 Humphrey, N. D., 538, 572, 607
 Hunt, J. M., 335, 402, 493, 496
 Hunter, E. C., 217, 218, 278
 Husband, R. W., 194
 Hutt, M. L., 40, 41, 92
 Huxley, T. S., 414
 Hyman, H. H., 167, 194
 Hymes, D., 338, 400, 402, 457, 498
 Hymovitch, B., 191
 Inkeles, A., 284, 321, 361, 368, 374, 402, 422, 424, 444, 452, 456, 457, 460, 464, 466, 467, 469–471, 473, 480, 483, 485–487, 498, 499
 Irwin, F. W., 17, 93
 Israel, J., 84, 92, 98, 183, 191, 504
 Jaastad, K., 69, 72, 73, 91
 Jaco, G. E., 385, 402
 Jacobs, H., 528, 533, 606
 Jacobs, M., 335, 378, 402
 Jacobs, R. C., 7, 94
 Jacques, E., 370, 374, 402
 Jaffe, J., 225, 226, 281
 Jahoda, G., 339, 340, 403
 Jakobson, R., 354, 403
 James, J., 566, 604, 606
 James, W., 592, 594, 606
 Janda, K. F., 160, 194, 213, 278
 Jandorf, E. M., 453, 193
 Janis, I. L., 9, 38, 93, 181, 190, 194, 195, 548, 606
 Janowitz, M., 422, 449, 494, 499
 Jay, P., 632, 634, 635, 640
 Jaynes, W. E., 93
 Jeffreys, M. D. W., 389, 403
 Jenkins, J. G., 228, 279
 Jennings, H. H., 211, 220, 247, 253, 258, 279
 Johnson, D. M., 71, 94
 Johnson, H. H., 7, 95
 Johnson, H. M., 293, 321
 Johnston, R. F., 589, 606
 Jones, E., 346, 351, 356, 403
 Jones, E. E., 8, 32, 94, 165, 176, 194, 195
 Jones, S. C., 28, 94
 Jordan, A. M., 217, 218, 278
 Jordan, N., 104, 195

Joseph, A , 334, 403, 453, 460, 499, 505
Jung, C. G., 352

Kaada, B , 624, 640

Kagan, J , 175, 199

Kahl, J., 457, 499

Kajaratnam, N , 56, 99

Kamin, L. J , 620, 642

Kanareff, V T , 9, 17, 94, 95, 176, 196

Kaplan, B , 397, 402, 420, 423, 427, 444, 453, 454, 479, 493–495, 497, 499, 501, 504, 505

Kardiner, A., 326, 344, 348, 349, 359, 384, 403, 419, 421, 424, 425, 427, 432, 436, 443, 449–451, 454, 457, 460, 461, 464–468, 478, 480, 490, 499

Katz, D., 216, 279

Katz, E., 111, 174, 195

Katz, I., 22, 24, 94, 227, 228, 279

Katz, L., 112, 113, 191, 195

Kavolis, V , 355, 403

Kayatani, M., 47, 100

Keller, A G., 329, 413

Kelley, H. H., 1–3, 8–12, 26, 33, 36, 38, 43–46, 48–50, 58, 59, 61, 73, 84, 87, 91, 93, 94, 97, 99, 103, 116, 119, 120, 123, 131–137, 156, 159, 160, 162–167, 171, 174–176, 184, 190, 195, 200, 203, 582, 583, 606

Kellogg, L. A., 636, 640

Kellogg, W N , 636, 640

Kelman, H. C , 9, 94, 170, 176, 177, 195

Kendon, A., 335, 354, 410

Kenkyujo, B. M., 414

Kennedy, D. A , 383, 403

Kennedy, W. A., 344, 403

Kerr, C , 558

Kerr, W., 225

Kidd, J. S , 176, 195

Kiev, A , 349, 363, 373, 381, 382, 386, 393, 403, 409, 414, 415

Killian, L. M., 507, 524, 538, 543, 544, 553, 567, 569, 578, 579, 606, 610

King, A., 357, 403

King, B. T., 175, 181, 194

King, J. A , 627, 640

Kinsey, A. C., 637, 640

Kipnis, D M., 123, 195

Kirscht, J P., 222, 279

Kitt, A S , 167, 198

Klanderinan, S. B., 179, 187

Klaus, J., 117, 192

Klein, G., 335, 403

Klein, M., 346, 402, 404, 408, 413

Klineberg, O , 330, 344, 404, 420, 423, 449, 499

Klingensmith, S. W., 339, 404

Klisurich, D., 182, 199

Klopfer, B., 342, 404

Klopfer, P. H , 3, 4, 94

Klopfer, W., 404

Kluckhohn, C , 323, 324, 349, 351, 352, 356, 362, 376, 392, 399, 401, 404, 419, 421, 423, 427, 429, 441, 442, 447, 453, 460, 462, 464, 469, 472, 493, 495, 497–499, 500, 504

Kluckhohn, F. L., 324, 366, 371, 404, 427, 435, 436, 442, 492, 500

Kluckhohn, R , 416

Klugman, S. F , 73, 94

Knapp, P. H., 413

Knight, J , 415

Knight, K. E., 154, 196

Knobloch, H., 331, 404

Koch, S., 401, 496, 498

Kodama, H , 343, 404

Koehler, K , 239, 241, 247, 282

Koekebakker, J., 119, 203

Koestler, A., 592

Kogan, N , 78–81, 83, 86, 89, 94, 95, 100, 580, 610

Kohen, M., 355, 404

Kohlberg, L., 363, 404

Kohut, H , 335, 404

Kolb, W. L., 604

Komarovsky, M., 475, 500

Konig, R., 507, 606

Kornhauser, W , 266, 279

Kortlandt, A , 633, 640

Kounin, J. S , 279

Kracauer, S., 355, 374, 404, 457, 478, 500

Krauss, R M., 46, 91, 190

Krech, D., 220, 248, 259, 279, 586, 606

Kris, E , 327, 383, 401, 411, 429, 430, 497

Kris, M., 401, 411

Kroeber, A. L , 323, 404, 502

Krout, M. H., 268, 279

Kruijt, J P., 622, 640

LaBarre, W., 325, 353, 354, 361, 372, 373, 382, 386–388, 404, 405, 419, 458, 472, 477, 482–484, 490, 495, 500

Lake, H , 372

Lakey, G , 578, 584, 608

Lamb, T. W., 9, 26, 94

Lambert, W. E., 12, 44, 56, 75, 96, 174, 195, 262, 279

Lambert, W. W , 349, 405, 462, 465, 466, 479, 500, 502

Lambo, T A , 405

Landau, H G., 156, 195

- Landauer, T. K., 330, 331, 405
Landes, R., 381, 405
Lane, R. E., 422, 500
Lang, D., 522, 606
Lang, G. E., 507, 524, 538, 543, 567, 591, 606
Lang, K., 507, 524, 538, 543, 567, 591, 606
Langham, P., 194, 278
Langner, T. S., 413
Lanham, B. B., 361, 405
Lanternari, V., 372, 405, 588, 606
Lantis, M., 368, 405
Lanzetta, J. T., 9, 17, 18, 31, 91, 94, 95, 115, 116, 176, 196, 200, 274
Larsen, I. M., 99, 202
Larson, C., 122, 196
Lasswell, H. D., 500, 502, 591, 606
Laughlin, P. R., 71, 95
Laurendeau, M., 405
Lavin, D. E., 307, 321
Lawrence, D., 137, 194
Lawson, E. D., 147, 149, 150, 196
Lazarsfeld, P. F., 198
Leary, T., 388, 415
Leavitt, H. J., 19, 20, 29, 48, 52, 53, 84, 89, 95, 138–140, 147, 149–152, 154, 155, 196, 241, 249, 279
Le Bon, G., 427, 500, 517, 531, 535, 536, 538, 539, 542–546, 550, 553–556, 567, 568, 570, 573, 579, 607
Lederer, E., 507, 542, 607
Lee, A. M., 249, 279, 538, 572, 604, 607
Lee, F. J., 122, 194
Lee, S. G., 357, 359, 380, 405
Leeper, R. M., 180, 196
Lefcourt, H. M., 11, 95
Lefl, W. F., 158, 196
Lefkowitz, M., 174, 196
Leht, D. J., 3, 89
Leiderman, P. H., 642
Leighton, A. H., 378, 383, 384, 405, 500
Leighton, D. C., 382, 383, 405, 419, 460, 469, 472, 500
Leites, N., 355, 416, 423, 425, 457, 476, 500, 506
Lenin, V. I., 578, 607
Lenneberg, E. H., 7, 90
Lenski, G., 311, 321
Lerner, D., 422, 439, 440, 446, 456, 464, 477, 500, 501, 502
Lerner, M. J., 170, 175, 186
Lessa, W. A., 325, 359, 406
Levine, D., 195
Levine, J., 84, 95
LeVine, R. A., 361, 363, 365, 368, 369, 375, 406, 445, 456, 501
Levinger, G., 170, 191, 213, 249, 276, 281
Levinson, D., 364, 406
Levinson, D. J., 392, 422, 452, 456, 470, 493, 499, 501, 603
Levinson, M. H., 470, 501
Lévi-Strauss, C., 336, 354, 406
Levy, B. I., 31, 33, 89
Levy, D. M., 358, 406, 449, 453, 484, 501
Levy, I., 89
Levy, M. J., 284, 292, 299, 321, 423, 479, 493, 501
Levy, S., 274
Lévy-Bruhl, L., 338
Lewin, G., 501
Lewin, K., 30, 84, 86, 88, 95, 138, 165, 166, 182, 196, 207, 261, 279, 441, 484, 501, 553, 607
Lewis, O., 294, 296, 321, 365, 406
Li An-che, 463, 501
Libby, W. L., Jr., 174, 195
Libman, E., 174, 195
Libo, L. M., 122, 196
Lichtenberg, P., 85, 95
Lichtenstein, A., 414
Lieberman, S., 469, 501
Lieberson, S., 601, 607
Lifton, R. J., 482, 501
Likert, R., 231, 241, 260, 279
Lin, T. Y., 391, 406
Lincoln, C. E., 597, 599, 607
Lincoln, J. S., 356, 357, 406
Lindesmith, A. R., 423, 501
Lindsley, D. B., 640
Lindzey, G., 90, 119, 195, 196, 201, 358, 359, 406, 421, 453, 499, 501, 604
Linton, R., 288, 321, 326, 360, 363, 369, 406, 410, 421, 423–425, 427, 436, 479, 499, 501
Lippitt, R., 30, 95, 157, 165, 193, 196, 249, 258, 261, 262, 265, 279–281, 580, 605
Lipset, S. M., 322, 422, 449, 501, 556, 558, 561, 605, 607, 609
Lau Shao-Ch'i, 595, 607
Livingston, D. G., 225, 226, 281
Locke, E. A., 469, 494
Locke, N., 355, 406
Lodahl, T. M., 28, 92, 222, 279
Loewenstem, R. M., 327, 383, 401, 430, 501
Lomax, A., 355, 406
Lomax, L., 576, 600, 607
London, J. B., 386, 406
Lonergan, B. G., 82, 95

- Long, B. M., 17, 95
 Lorenz, K., 518, 535, 607, 612, 617, 641
 Lorge, I., 55–57, 61, 62, 66, 68, 70, 73, 76, 92, 95, 96, 100
 Lott, A. J., 119, 121, 123, 124, 175, 196, 197
 Lott, B. E., 119, 121, 123, 124, 196
 Loves, H., 340, 406
 Lowell, E. L., 368, 406
 Lowenthal, L., 422, 501
 Lowie, R. H., 326, 406
 Luce, R. D., 19, 20, 53, 61, 90, 96, 113, 132, 149, 162, 196, 197, 608
 Luchins, A. S., 197
 Lumsdaine, A. A., 177, 194, 515, 606
 Lunt, P. S., 311, 322
 Luther, M., 592, 597, 603
 Lyonns, G., 536, 607
 Lyons, J., 105, 194

 Maas, H. S., 242, 279
 McAllester, D. P., 405
 McBride, D., 170, 197, 201
 McClelland, D. C., 368, 369, 406, 421, 423, 435–437, 446, 457, 467, 477, 501
 McClintock, C. G., 226, 252, 276, 279
 McClosky, H., 449, 502
 Maccoby, E. E., 90, 186, 320, 416, 494
 McCone, J. A., 572, 607
 McCurdy, H. G., 262, 279
 McDavid, J., Jr., 180, 197
 McDougall, W., 103, 296, 321, 333, 400, 508, 543, 550, 553, 607
 McGaugh, J. L., 213, 275
 McGeehee, C. R., 274
 McGimmes, F., 125, 185, 197
 McGranahan, D. V., 453, 457, 502
 McGrath, J. E., 103, 184, 197
 MacGregor, F. C., 331, 407
 McGuire, W. J., 190, 551, 607
 MacIver, R. M., 502
 Mackay, C., 508, 586, 607
 Mackenzie, K. D., 137, 138, 197
 McKinney, J. C., 322
 Macklin, D. B., 405
 MacLean, P. D., 327, 328, 407, 410
 McLuhan, M., 393
 Macmillan, A. M., 405
 McWhinney, W. H., 53, 96, 138, 197
 Macy, J., Jr., 19, 20, 53, 90, 96, 149, 189, 197
 Madden, E. N., 39, 99
 Madsen, W., 379, 407
 Mahara, T., 344, 407
 Maier, N. R. F., 27, 57, 96
 Maier, R. A., 22, 27, 96
 Maistriaux, R., 340, 407
 Maldonado-Sierra, E. D., 366, 398
 Malinowski, B., 324, 348, 398, 407
 Malof, M., 175, 197
 Malone, M., 187
 Mann, R. D., 160, 203, 216–224, 226, 227, 249, 279
 Mannheim, H., 509, 607
 Mansson, H. H., 178, 200
 Manuel, H. T., 358, 407
 Mao Tse-Tung, 578, 607
 March, J. G., 10, 11, 96, 160, 188, 197
 Marcus, P. M., 212, 279
 Maiden, H., 593, 607
 Marlowe, D., 5, 93
 Maroney, R. J., 156, 197
 Marple, C. H., 177, 197
 Marquart, D. L., 44, 56, 62, 63, 73, 96
 Marquis, D. G., 78, 81, 96, 123, 197
 Marshall, F. B., 395
 Marston, M., 620, 642
 Martin, C. E., 640
 Martin, E. D., 538, 547, 555, 586, 607
 Martin, W. C., 123, 190
 Marwick, D., 499
 Marx, K., 570, 607
 Masling, J., 223, 226, 279
 Maslow, A. M., 156, 197, 216, 249, 279
 Mason, W. A., 221, 280, 635, 641
 Masure, R. H., 4, 88
 Matthews, J. W., 179, 201
 Maucorps, P. H., 98
 Mausner, B., 9, 96, 176, 197
 Maynard, H. B., 151, 197
 Mead, G. H., 102, 364, 407, 421
 Mead, M., 324, 326, 331, 339, 351, 355, 358, 360, 361, 364, 372, 374, 380, 392, 407, 419, 421, 423–425, 429, 431, 442, 449–451, 453, 458, 460, 463, 464, 469, 470, 486, 488, 490, 493, 498, 502
 Meadow, A., 385, 407
 Medaha, N. Z., 223, 280
 Medow, H., 33, 85, 86, 101
 Meckel, H. S., 371, 407
 Meier, N. C., 23, 581, 607
 Melanchthon, 597
 Mennenga, G. H., 581, 607
 Merer, F., 87, 96, 157, 197, 241, 280
 Merton, R. K., 167, 198, 286, 288, 295, 300–302, 308, 313, 321, 469, 498, 502, 544, 607
 Messick, S., 94
 Messinger, S. L., 596, 608

- Methvin, E. H., 523, 608
 Mettraux, R., 425, 502
 Metzner, R., 388, 415
 Meuwese, W. A. T., 276
 Meyer, D. L., 9, 91, 176, 190
 Michael, S. T., 413
 Michelet, J., 509, 608
 Miles, C. G., 175, 188
 Milgram, S., 179, 198, 421, 502, 547, 580, 608
 Millard, C., 518, 532, 608
 Miller, D. C., 288, 307, 321
 Miller, D. R., 312, 321, 466, 502
 Miller, G. A., 3, 19, 20, 93, 148, 149, 194
 Miller, J. G., 414
 Miller, J. S., 170, 186
 Miller, K. W., 344, 388, 397
 Miller, N. E., 96, 161, 169, 198, 291, 321, 605
 Miller, R. E., 156, 162, 198
 Mills, J., 9, 18, 91, 176, 190
 Mills, T. M., 88, 125, 126, 158, 198
 Milner, M., 353, 408
 Miner, H., 326, 341, 375, 384, 396, 408
 Minton, H. L., 184, 198
 Minturn, L., 462, 466, 502
 Mintz, A., 582, 608
 Mirsky, I. A., 156, 162, 198
 Mishler, E. G., 18, 99
 Miyadi, D., 635, 641
 Mizushima, K., 359, 391, 396, 408
 Moellenhoff, F., 355, 408
 Mohanna, A. I., 150, 198
 Molineux, E. L., 579, 608
 Moltz, H., 618, 641
 Money-Kyrle, R. E., 346, 402, 404, 408, 413
 Mooney, J., 372, 408
 Moore, A. V., 619, 640
 Moore, H. T., 177, 198
 Moore, O. K., 262, 280
 Moore, W. E., 282, 286–288, 290–293, 295, 297, 298, 301, 304, 305, 308, 310, 312–316, 319–322, 503
 Moreno, J. L., 103, 105, 198
 Morgan, C. D., 503
 Morgan, W., 356, 404
 Morgenstern, O., 132, 162, 204
 Morris, C., 435, 438, 464, 502, 587, 608
 Morris, C. W., 446, 502
 Morris, M. L., 220, 277
 Morris, R. T., 212, 281
 Morrison, H. W., 170, 191, 213, 276
 Morrisette, J. O., 106, 108, 147–149, 198
 Moscovici, S., 20, 69, 91
 Moss, G., 96
 Mouton, J. S., 34, 46, 62, 89, 93, 96, 173, 174, 176, 187, 189, 191, 196
 Mowrer, O. H., 423, 500, 605
 Mueller, R. A. H., 20, 95
 Muensterberger, W., 394, 396, 400, 401, 403, 409, 411,
 Muhammad, E., 599
 Mukerji, N.P., 4, 96
 Mulder, M., 152, 153, 198, 242, 249, 254, 280
 Mundy, D., 94, 99
 Murakami, E., 408
 Murchison, C., 91, 201, 275, 641
 Murdock, G. P., 347, 408
 Murie, A., 641
 Murphy, G., 254, 280, 324, 408, 420, 441, 468, 502, 503
 Murphy, H. B. M., 377, 384, 388, 389, 391, 408
 Murphy, J. M., 378, 382, 405, 408
 Murphy, J. V., 156, 162, 198
 Murphy, L. B., 420, 503
 Murphy, R. F., 326, 408
 Murphy, W., 539, 604
 Murray, H. A., 392, 399, 401, 404, 419, 423, 436, 447, 451, 454, 493, 495, 497, 498, 500, 503, 504
 Murray, M., 597
 Murray, V. F., 334, 403, 453, 499
 Mussen, P. H., 175, 199, 460, 503
 Myers, C., 333, 400
 Myers, J. G., 90
 Nadel, S. F., 334, 408
 Naegele, K. D., 466, 493
 Narain, D., 444, 503
 Naranjo, C., 387, 408
 Nash, D. J., 26, 96
 Natsoulas, T., 174, 203
 Neisser, U., 541, 608
 Nelson, P. D., 252, 280
 Nettleford, R., 588, 609
 Neugarten, B. L., 339, 340, 401
 Neumann, J. von, 132, 162, 204
 Newcomb, T. M., 83, 86, 90, 92, 95, 102–105, 109, 166, 174, 175, 186, 189, 190, 195, 199, 224–226, 275, 279, 282, 320, 404, 416, 420, 494, 503, 607
 Newman, P. L., 381, 408
 Nice, M. M., 625, 641
 Nicholson, G., 450, 497
 Nicol, E. H., 29, 97
 Niebuhr, R., 596, 608
 Nietzsche, F., 249

- Nissen, H., 630, 633, 641
 Nixon, M., 246, 274
 Nomura, N., 344, 409
 Norbeck, E., 350, 351, 361, 409
 Nordhøy, F., 81, 82
 Norfleet, B., 222, 280
 Norman, R. Z., 103, 106, 108, 193
 Northrop, L. S. C., 500
 Norton, W. J., 538, 608
 Nuttin, J., 98

 Oberholtzer, E., 359, 453
 O'Brien, G., 109, 199
 Oesei, O. A., 106, 109–111, 119, 199
 O'Hair, M. M., 597
 Olds, J., 186
 Olmstead, D. W., 122, 200
 Olver, R. R., 340, 394
 Oonk, S., 276
 Opler, M. E., 366, 409, 442, 458, 503
 Opler, M. K., 385, 386, 402, 409, 413, 415
 Oppenheimer, M., 578, 584, 608
 Orlansky, H., 468, 490, 503
 Orne, M. T., 179, 180, 199
 Ortega y Gasset, J., 542, 608
 Osborn, A. E., 72, 96
 Osgood, C. E., 175, 176, 199, 359, 370, 409
 Osmer, D., 98
 Ovesey, L., 344, 384, 403, 427, 451, 499
 Ozturk, O. M., 379, 409

 Packard, V., 312, 322
 Palmer, G. J., 22, 97
 Pareto, V., 102
 Park, R. E., 421, 510, 543, 608
 Parker, S., 368, 370, 384, 409, 479, 503
 Parkes, A. S., 529, 608
 Parkinson, C. N., 158, 199
 Parnes, S. J., 72, 96
 Parsons, A., 346, 409
 Parsons, T., 102, 186, 255, 273, 280, 286, 292,
 322, 347, 348, 409, 415, 422, 423, 429, 449,
 464, 481, 484, 503, 559, 608
 Partridge, E. D., 216, 217, 280
 Pasamanick, B., 331, 344, 404
 Patel, A. S., 9, 96
 Patrick, J. R., 181, 202
 Pavlov, I. P., 347, 620
 Peak, H., 175, 199
 Pearson, W. H., 148, 149, 198
 Pelz, D. C., 239, 240, 253, 280
 Pennington, D. F., Jr., 182, 183, 199
 Penrod, W. T., Jr., 9, 98
 Penrose, L. S., 534, 608
 Pepinsky, P. N., 93, 162, 199, 251, 280
 Pepitone, A., 83, 86, 92, 97
 Perlmutter, H. V., 66–68, 73, 77, 97, 105, 194
 Perry, A. D., 196
 Pessin, J., 4, 97
 Peters, D. R., 223, 232, 237, 276
 Peterson, W. A., 539, 608
 Petrullo, L., 92, 93, 199, 274, 275, 278
 Pettigrew, T. F., 334, 392, 427, 444, 454, 503
 Phillips, H. P., 358, 364, 409, 444, 452, 453,
 503
 Phillips, L., 342, 409
 Phillips, W., 355, 409
 Philp, A. J., 123, 199
 Phoenix, C. H., 624, 642
 Piaget, J., 335, 338, 342, 409, 410
 Piers, G., 472, 503
 Pigors, P., 212, 280
 Pike, K. L., 336, 337, 354, 410
 Pinard, A., 405
 Pinkney, D., 527, 608
 Plato, 597
 Plaut, T. F. A., 444, 499
 Ploog, D. W., 328, 410
 Polansky, N., 123, 193, 196, 256, 265, 279,
 280, 580, 605
 Pomeroy, W. B., 640
 Pool, I., 464, 480, 503
 Pope, L., 596, 608
 Porter, L. W., 75, 100
 Portmann, A., 641
 Poser, E. G., 174, 195
 Posinsky, S. H., 355, 364, 386, 410, 411
 Postman, L., 538, 539, 554, 603
 Potter, J. H., 627, 641
 Preston, H. O., 228, 280
 Preston, M. G., 280
 Price-Williams, D. R., 334, 340, 342, 410
 Propp, V., 354, 410
 Proshansky, H., 207, 280, 494
 Pruitt, D. G., 80, 99
 Pryer, M. W., 77, 89, 97
 Pye, L. W., 374, 410, 422, 476, 503

 Rabbie, J. M., 174, 192
 Rabinowitz, L., 49, 50, 97
 Rabow, J., 79, 97
 Radin, P., 372, 410
 Radke, M., 182, 199
 Radloff, R., 94
 Raiffa, H., 61, 96, 132, 162, 196

- Rajaratnam, N., 99
 Rank, O., 353, 410
 Rapaport, D., 335, 342, 410
 Rapoport, A., 563, 564, 608
 Rappoport, L. H., 24, 97
 Rashevsky, N., 248, 280, 535, 563–565, 568, 608
 Ratman, B., 401
 Raven, B. H., 24, 30, 36, 92, 97, 158–160, 165, 166, 168–170, 176, 178, 181, 182, 189, 191, 196, 199, 200, 209, 213, 276
 Ravenscroft, K., Jr., 381, 410
 Ray, V. E., 402, 414
 Read, M., 366, 410
 Redfield, R., 369, 410
 Redl, F., 161, 196, 200, 210, 255, 258, 265, 280, 281, 548, 608
 Redlich, F. C., 310, 321
 Reese, H., 72, 96
 Reeves, J., 390, 399
 Reich, W., 421, 430, 449, 465, 503, 549, 608
 Reichling, G., 86, 97
 Reik, T., 421, 457, 503
 Rennie, T. A., 413
 Restle, F., 21, 56, 57, 62, 70, 74, 87, 91, 97
 Rettig, S., 82, 97
 Rheingold, H. L., 640, 641
 Ribbands, R., 641
 Richardson, H. M., 218–222, 281
 Richmond, J. B., 619, 640
 Richter, C. P., 620, 641
 Ricklin, F., 353, 410
 Rickman, J., 399, 419, 443, 460, 461, 486, 497, 504
 Riecken, H. W., 22, 37, 97, 99, 119, 184, 200
 Riesman, D., 293, 322, 354, 410, 422, 442, 449, 450, 503
 Rietsma, J., 30, 97
 Rim, Y., 81, 97
 Ring, K., 37, 97, 171, 200
 Ringer, B. E., 485, 491, 503
 Ritchie, J., 453, 493
 Ritter, P., 531, 609
 Rivers, W. H. R., 324, 333, 356, 410, 419
 Roberts, J. M., 335, 354, 410
 Roby, R. B., 29, 97
 Roby, T. B., 17, 18, 95, 115, 116, 200
 Rockwell, G. L., 586
 Rodnick, D., 484, 504
 Rodrigues, A., 159, 189
 Roe, A., 427, 474, 475, 504
 Roemer, D. U., 516, 531, 535, 552, 609
 Roethlisberger, F. J., 103, 118, 182, 200
 Roff, M. E., 228, 235, 236, 281
 Roffenstein, G., 356, 410
 Rogers, E. D., 175, 202
 Rogers, E. M., 177, 186
 Rogers, M. S., 99, 202
 Rogler, L. H., 378, 381, 410
 Rogow, A. A., 132, 196
 Roheim, G., 346, 349, 353, 356, 386, 399, 410, 411, 414, 421, 431, 453, 457, 458, 468, 490, 500, 504
 Rohrer, J. H., 343, 411
 Rokeach, M., 594, 609
 Rommetvent, R., 98, 421, 504
 Romney, A. K., 169, 185, 411, 413
 Roschotough, M. E., 18, 88, 119, 200
 Rosen, S., 158, 196, 200, 249, 265, 279, 281
 Rosenbaum, M., 174, 200
 Rosenbaum, M. E., 9, 97
 Rosenberg, L. A., 9, 97
 Rosenberg, M., 427, 475, 504
 Rosenberg, M. J., 109, 190, 200
 Rosenberg, S., 49, 50, 58, 98, 117, 200
 Rosenblatt, J. S., 620, 641
 Rosenblatt, R. M., 49, 50, 97
 Rosenthal, D., 32, 98
 Rosenthal, R., 180, 200
 Rosenzweig, S., 447, 504
 Ross, D., 169, 174, 186
 Ross, E. A., 508, 609
 Ross, S. A., 169, 174, 186
 Rothery, R. W., 531, 605
 Rothschild, G. H., 202
 Rotter, J. B., 11, 30, 98
 Rubinfine, D. L., 335, 411
 Rudé, G., 536, 540, 609
 Rudwick, E. M., 572, 609
 Ruesch, J., 427, 433, 504
 Rutenbeek, H. M., 322
 Rule, J., 536, 616
 Runkel, P. J., 200
 Russell, B., 205
 Russell, R. W., 339, 411
 Russett, B., 477, 504
 Sade, D. S., 635, 641
 Sagi, P. C., 122, 200
 Saint Paul, U. von, 625, 641
 Sales, S. M., 5, 101
 Salzen, E. A., 618, 642
 Samuelson, P. A., 508, 609
 Sandhu, H. S., 359, 400
 Sandler, A. M., 336, 411
 Sanford, F. H., 223, 245, 246, 261, 268, 281

- Sanford, R. N., 392, 493, 603
 Sapir, E., 336, 411, 419, 421, 504, 508, 609
 Sarason, S. B., 325, 341, 376, 399, 455, 497
 Sargent, W., 374, 411, 423, 441, 475, 497, 499, 500–502, 504
 Sarnoff, L., 174, 200
 Sartre, J. P., 42, 98
 Saunders, D. R., 154, 189, 244, 275
 Savio, M., 558
 Scarr, H. A., 366, 395, 446, 494
 Schaar, J. H., 449, 502
 Schachter, S., 32, 98, 123, 124, 172, 174, 182, 191, 200, 201
 Schafet, R., 342, 411
 Schaffner, B., 419, 453, 484, 504
 Schaller, G. B., 633–641
 Schanck, R. L., 170, 201
 Scheerer, M., 169, 201
 Scheidlinger, S., 161, 201
 Schem, E. H., 151, 153, 155, 201, 484, 504
 Schelling, T. C., 35, 48, 98, 127, 162, 201
 Schenitzki, D. P., 45, 49, 59
 Schmerhorn, R. A., 160, 201, 371, 412
 Schjelderup-Ebbe, T., 156, 201, 216, 616, 641
 Schmeck, H. M., 531, 609
 Schneider, D. M., 392, 399, 401, 404, 419, 423, 447, 493, 498, 501
 Schnore, L. F., 321
 Schnurmann, A., 336, 411
 Schopler, J., 160, 165, 179, 201
 Schlag, C., 226, 227, 281
 Schrier, A. M., 640
 Schrijnen, J., 403
 Schulterbrandt, J. G., 377, 415
 Schultz, D. P., 527, 609
 Schutz, F., 641
 Schutz, W. C., 125, 201
 Schwab, J. L., 151, 197
 Schwartz, T., 373, 374, 407, 412
 Scott, E. L., 239, 262, 281
 Scott, J. P., 328, 329, 412, 617–620, 624, 625, 627, 636, 641, 642
 Scott, R. B., 331, 416
 Sears, D. O., 17, 23, 92, 609
 Sears, R. R., 519, 601, 602, 605, 606
 Sears, W., 478
 Seashore, S., 201
 Secord, P. F., 103, 160, 201, 213, 281
 Seeman, M., 11, 98, 212, 281
 Segall, M. H., 333–335, 402, 412
 Segy, J., 349, 412
 Seidenberg, B., 207, 276, 280, 494
 Seitz, P. F. D., 335, 401
 Sellers, W., 334, 412
 Selvin, H. C., 258, 260, 261, 281
 Selznick, P., 240, 281, 561, 609
 Sengupta, N. N., 6, 98
 Shapiro, D., 642
 Shapley, L. S., 132, 201
 Shartle, C. L., 210, 211, 281
 Shaw, L. M., 124, 201
 Shaw, M. E., 9, 18, 19, 21, 22, 24, 41, 56, 62, 63, 92, 98, 124, 138–141, 146–150, 152, 155, 192, 202, 242, 249, 261, 262, 281
 Sheffield, F. D., 177, 194, 545, 606
 Sheldon, W. H., 291, 322, 464, 504
 Shellow, R., 516, 531, 535, 552, 609
 Shelly, M. W., 16, 98, 202
 Sherif, C. W., 43, 96, 98, 99, 167, 202, 583, 609
 Sherif, M., 43, 46, 98, 99, 103, 167, 171, 191, 202, 209, 268, 274, 281, 553, 583, 586, 598, 604, 609
 Sherwood, E. T., 359, 412
 Shevitz, R. N., 16, 93, 162, 199, 251, 280
 Shibutani, T., 167, 202
 Shibuya, Y., 97
 Shils, E. A., 167, 192, 273, 280, 422, 423, 429, 503
 Shinagawa, F., 343, 404
 Shogan, R., 572, 609
 Showell, M., 225, 281
 Shriver, B., 250, 274
 Shubik, M., 132, 201, 202
 Shuey, A. M., 344, 412
 Shure, G. H., 15, 98, 153, 154, 202
 Siddiqui, M. R., 642
 Sidis, B., 521, 542, 562, 609
 Siegal, S., 45, 49, 59, 92, 99, 174, 202
 Siegel, A., 235, 237, 243, 278
 Siegel, A. E., 174, 202
 Siegel, B. J., 398
 Signele, S., 542, 553, 567, 568, 609
 Sikkema, M., 361, 412
 Silk, A. J., 90
 Sills, D. L., 485, 491, 503
 Silverman, A. R., 601, 607
 Simmel, G., 102, 125, 128, 202, 534, 609
 Simmons, L. W., 332, 412
 Simmons, O. G., 388, 412
 Simon, H. A., 10, 11, 19, 73, 96, 116, 150, 151, 153, 193
 Simon, T., 343, 393
 Sims, V. M., 181, 202
 Singer, M., 418, 504
 Singer, M. B., 472, 503

- Singh, B. N., 391, 412
 Sinha, C. P. N., 6, 98
 Sinha, M. M., 156, 197
 Skeels, D., 355, 412
 Skinner, B. F., 36, 99, 296, 322
 Skinner, J., 355, 412
 Slater, P. E., 160, 186
 Slotkin, J. S., 387, 405, 412
 Sluckin, W., 617, 618, 642
 Smelser, N. J., 322, 422, 505, 507, 532, 538, 555-558, 560-562, 581, 590, 591, 609
 Smelser, W. T., 28, 99, 220, 281, 422, 505
 Smith, A. J., 39, 99, 225, 226, 281
 Smith, E. C., Jr., 26, 92
 Smith, E. E., 40, 99
 Smith, J. G., 342, 409
 Smith, M. G., 588, 609
 Smith, M. W., 423, 441, 497, 499-502, 504
 Smith, R. T., 365, 412
 Smith, S., 138
 Smith, W. A. S., 17, 93
 Smith, W. L., 529, 605
 Smith, W. R., 348, 412
 Smoke, W. H., 53, 54, 101
 Snyder, R., 176, 192
 Sobol, R., 39, 99
 Soboul, A., 536, 609
 Sofue, T., 361, 412
 Solem, A. R., 27, 96
 Solomon, H., 55-57, 61, 62, 65, 70, 95
 Solomon, R. L., 620, 642
 Soper, H. E., 566, 609
 Sorokin, P. A., 302, 322, 478, 505
 South, E. B., 74, 99
 Southwick, C. H., 634, 642
 Spencer, B., 412
 Spicer, R. B., 453, 499
 Spiegel, J., 96
 Spiegelman, M., 325, 359, 406
 Spindler, G. D., 325, 359, 367, 369, 371, 412, 413, 427, 453, 475, 505
 Spindler, L., 359, 367, 369, 371, 412, 413, 427, 453, 505
 Spiro, M. E., 348, 349, 352, 364, 413, 420, 423, 479, 481, 505
 Spitz, R., 413
 Spraker, H. S., 68, 88
 Srole, L., 383, 413
 Staats, C. K., 75, 77, 90
 Stanley, W. C., 621, 625, 639
 Star, S. A., 203, 322
 Stegermerten, G. J., 151, 197
 Steggerda, M., 395
 Stem, M. I., 489, 505
 Steiner, G. A., 310, 320
 Steiner, I. D., 56, 99, 175, 199, 202
 Stemerding, A., 254, 280
 Stephan, F. F., 18, 99
 Stephens, W. N., 346, 348, 413
 Stern, G. G., 489, 505
 Stevens, S. S., 322, 464, 504
 Stevenson, H. W., 404
 Stewart, D. C., 405
 Stewart, K., 357, 413
 Stice, G. F., 115, 154, 189, 208, 218-224, 243, 244, 275
 Stoetzel, J., 422, 505
 Stogdill, R. M., 160, 203, 209-211, 216, 220, 221, 226, 227, 239, 241, 247, 276, 281, 282
 Stoker, D., 385, 407
 Stokes, A., 355, 413
 Stollnitz, F., 640
 Stoltz, H. Z., 581, 607
 Stoner, J. A. F., 78, 79
 Stoodley, B. H., 422, 505
 Stotland, E., 86, 87, 99, 158, 174, 203, 204
 Stouffer, S. A., 172, 203, 234, 240, 253, 282, 309, 322
 Strauss, A. L., 423, 501
 Strecker, E. A., 586, 609
 Strickland, J. F., 202
 Strickland, L. H., 24, 36, 99
 Strodbeck, F. L., 15, 18, 88, 158, 160, 174, 195, 203, 366, 404, 427, 500
 Sturtevant, W. C., 337, 393, 395, 398, 399, 402, 413, 415
 Suchman, E. A., 122, 203, 322
 Suchman, J. R., 203
 Suci, G. J., 176, 199
 Sugiyama, Y., 632, 642
 Sullivan, H. S., 421, 465, 505
 Sumner, W. G., 300, 322, 329, 413
 Sutton, F. X., 493
 Sutton-Smith, B., 335, 354, 410
 Suzuki, H., 343, 413
 Swanson, G. E., 189, 195, 312, 321, 406, 422, 466, 502, 505
 Switzer, S. A., 147-149, 198
 Szasz, T. S., 376, 413, 586, 609
 Taffel, C., 161, 169, 203
 Tagiuri, R., 199
 Taine, H. A., 536
 Talland, G. A., 225, 282
 Tanaka, K., 343, 413
 Tannenbaum, A. S., 160, 168, 203

- Tannenbaum, P. H., 175, 176, 190, 199, 203
 Tanner, J. M., 331, 413
 Tarachow, S., 355, 414
 Tarde, G., 102, 508, 542, 550, 610
 Tassone, J., 99, 202
 Tax, S., 405
 Taylor, D. W., 56, 68, 72–74, 99, 262, 282
 Teger, A. I., 80, 99
 Teicher, M. L., 381, 414
 Tembrock, G., 627, 642
 TenHouten, W., 390, 399
 Terman, L. M., 64, 99, 268, 282
 Terrien, F. W., 158, 203
 Textor, R. B., 477, 493
 Thibaut, J. W., 1–3, 8, 10–12, 24, 33, 36, 37, 43, 49, 61, 73, 87, 94, 99, 103, 116, 119, 120, 132, 137, 156, 159, 160, 162–166, 171, 184, 195, 203
 Thomas, E. J., 22, 56–58, 71, 80, 84, 99, 102, 187
 Thomas, W. L., 246, 282
 Thompson, G., 123, 192
 Thompson, L., 334, 414, 460, 505
 Thorndike, E. L., 248, 266, 282
 Thorndike, R. L., 62, 71, 75, 76, 100
 Thorne, I., 457, 505
 Thorpe, W. H., 622, 642
 Thrasher, F., 157, 203
 Thurstone, L. L., 222, 282
 Tilly, C., 536, 610
 Timmons, W. M., 64, 100
 Tinbergen, N., 328, 414, 642
 Toch, H., 585, 587, 588, 592, 594, 610
 Tojo, T., 344, 414
 Tomkins, S. S., 291, 322
 Tomlinson, H., 587
 Tomlinson, T. M., 601, 602, 609
 Torrance, E. P., 100
 Torrey, R., 176, 195
 Tourlentes, T. T., 401
 Trent, R. D., 366, 398
 Triandis, H. C., 20, 100, 421, 505
 Triandis, L. M., 349, 405, 421, 479, 500, 505
 Triplett, N., 103, 203
 Trivers, R., 579, 610
 Troike, R. C., 387, 414
 Trotsky, L., 594
 Trow, D. B., 203
 Trow, M., 589, 610
 Trowbridge, N., 343, 394
 Tucker, I. F., 9, 97
 Tucker, W. B., 322
 Tuckman, J., 62, 96, 100
 Tuddenham, R. D., 175, 203
 Tullock, G., 37, 58–60, 88, 90
 Tumin, M. M., 304, 314, 322
 Turk, H., 212, 282
 Turner, A. N., 122, 203
 Turner, R. H., 103, 199, 507, 524, 525, 532, 535, 538, 541, 543, 544, 550, 552–555, 561, 567, 569, 610
 Turner, V. W., 382, 414
 Tylor, E. B., 348, 356, 414
 Uesugi, T. K., 135, 203
 Uhl, L., 388, 414
 Ullman, A. D., 422, 505
 Underwood, F. W., 468, 505
 Van Bergen, A., 119, 203
 Van De Riet, V., 344, 403
 Van Loon, F. G., 379, 414
 Vannoy, J., 148, 198
 Van Wulften Palthe, P. M., 380, 414
 Van Zelst, R. H., 123, 203
 Verba, S., 375, 392, 422, 439, 440, 445, 456, 477, 493
 Vinacke, W. E., 50, 51, 60, 89, 100, 131, 133–136, 185, 187, 189, 203, 204, 251, 275
 Vogt, E. Z., 371, 414
 von Holst, E., 625, 641
 Von Neumann, J., 132, 162, 204
 von Saint Paul, U., 625, 641
 Vroom, V. H., 28, 94
 Wada, G., 536, 610
 Wagatsuma, H., 326, 351, 396, 414
 Walker, L. C., 18, 92, 146, 147, 149, 192, 204
 Wallace, A. F. C., 336, 338, 347, 355, 357, 360, 364, 369, 372, 374, 400, 414, 415, 427, 453, 505
 Wallach, M. A., 78–81, 83, 86, 89, 94, 100, 581, 610
 Wallas, G., 570, 610
 Waller, M. B., 620, 642
 Walters, R. H., 3, 88, 161, 169, 186, 580, 603
 Walton, R. E., 25, 36, 46, 100
 Wapner, S., 4–6, 100
 Warner, W. L., 311, 322, 326, 332, 415
 Warren, J. M., 156, 197
 Washburn, S. L., 328, 415, 630, 631, 642
 Waskow, A. I., 534, 547, 572, 610
 Watson, G., 493
 Wayne, I., 457, 502
 Webb, E., 217, 282
 Webb, W. B., 211, 252, 278

- Weber, M., 102, 167, 204, 367, 415
 Webster, H., 332, 415
 Wegner, N., 28, 75, 77, 100
 Weil, G. M., 377, 415
 Weil, R. J., 388, 397
 Werner, M., 498
 Weinstein, E. A., 377, 415
 Weiss, R. S., 113, 204
 Weiss, W., 176, 180, 194
 Weisskopf, W. A., 479, 505
 Wellman, B. L., 216, 222, 274
 Wells, H. H., 176, 195
 Wepman, J. M., 394, 404
 West, J., 499
 West, P. S., 310, 321
 Westie, C. M., 235, 237, 243, 278
 Westley, W. A., 579, 610
 Wheeler, S., 320, 471, 494
 Wherry, R. J., 282
 Whisson, M. G., 382, 415
 White, H., 567, 610
 White, J. C., Jr., 344, 403
 White, J. E., 240, 282
 White, R., 430, 505
 White, R. K., 30, 95, 258, 261, 279
 White, T. H., 523, 610
 Whitehead, T. N., 255, 282
 Whiting, B. B., 351, 362, 415, 416, 460, 462, 465, 497, 506
 Whiting, J. W. M., Jr., 324, 330, 331, 349, 350, 362, 363, 382, 391, 405, 415, 416, 433, 434, 460, 465, 477, 479, 506
 Whitmyre, J. W., 73, 90
 Whorf, B. L., 337, 416
 Whyte, W. F., 157, 158, 204
 Wielawski, J., 380, 416
 Wiest, W. M., 75, 100
 Wilbur, G. B., 396, 401
 Wilensky, H. L., 37, 100, 288, 305, 311, 322
 Willerman, B., 84, 100, 182, 204
 Williams, J., 331, 416
 Williams, N. F., 8, 91
 Williams, R. M., Jr., 203, 322
 Williamson, E. G., 219, 282
 Willis, R. H., 137, 168, 204
 Willmott, P., 365, 417
 Wilson, M. O., 191, 274
 Wilson, W., 47, 100
 Winer, B. J., 230, 231, 235–237, 277
 Winiarz, W., 380, 416
 Winslow, C. N., 216, 282
 Wirz, T., 326, 416
 Wispe, L. G., 242, 275
 Wittkower, E. D., 377, 381, 408, 416
 Wolf, M., 349, 405, 479, 500
 Wolfe, A. W., 26, 96
 Wolfe, D. M., 15, 17, 39, 101, 159, 169, 187, 204
 Wolfenstem, M., 353, 355, 416, 425, 457, 506
 Wolff, H. G., 332, 412
 Wohn, S. S., 556, 558, 561, 605, 607, 609
 Wolkon, G. H., 189
 Wolman, B., 227, 239, 282
 Wolsey, C. N., 393
 Woolbert, C. H., 524, 610
 Wright, G. O., 337, 353, 416
 Wright, H. F., 279
 Wright, M. E., 86, 87, 100
 Wrong, D., 422, 506
 Wurster, C. R., 41, 89
 Wynne, L. C., 620, 642
 Wynne-Edwards, V. C., 328, 330, 416
 Yap, P. M., 379, 380, 416, 417
 Yarrow, L. J., 292, 322
 Yerkes, R. M., 29, 74
 Young, M., 365, 417
 Young, P. C., 274
 Young, V., 204
 Young, W. C., 624, 642
 Zajonc, R. B., 3–5, 24, 26, 53, 54, 68, 85, 101, 102, 117, 204
 Zander, A., 15, 17, 33, 39, 85, 86, 92, 101, 103, 119–122, 125, 158, 160, 171, 188, 189, 193, 203, 204, 251, 274, 277
 Zangwill, O. L., 612
 Zeaman, D., 28, 75, 77, 100
 Zelditch, M., Jr., 178, 186, 191
 Zeleny, L. D., 216, 282
 Zilboorg, G., 499
 Ziller, R. C., 17, 23, 27, 42, 91, 95, 101
 Zimbardo, P. G., 174, 200
 Zimmerman, W. S., 220
 Zipf, S. C., 170, 204
 Znamecki, F., 208, 209, 246, 282
 Zubin, J., 401
 Zuckerman, S., 631, 642

Subject Index

Subject Index

- Acceleration, in crowds, 530
- Acceptance
 leadership and, 239–240, 251
 need for, 438
- Accommodative strategies of coalition formation, 135–136
- Acculturation, 325, 340, 357, 367, 369–375, 389, 486, 490–491
 cultural stress and, 383–391
- Achievement, 81, 125, 135, 220, 251, 367–369, 370, 436–437, 447, 456, 467, 473, 477
- Acting-out behavior, 363
- Action
 components of, social, 555, 559–561
 mobilization for, 556, 558–560
 “orientation,” 28
 patterns of, and social structure, 284–286, 288, 298–300
- Activity
 in Homans’ group structure analysis, 113–114
 responsible, and groups, 122
 value orientation, 435–436
- Adaptation
 behavioral systems for, 612
 evolution and, 630
 national character and, 430, 432–433, 440, 448–450, 452, 464, 475, 484, 486, 489
 social movements and, 591, 596
 social structure and, 290–291
- Adaptive behavior, 371, 383, 385–386, 389
 vs. adjustive behavior, 352, 376
 maladaptive behavior, 375–376, 383–384
- Adaptiveness
 group problem solving and, 48–50
- Adjustive behavior, 357, 383, 389
 vs. adaptive behavior, 352, 376
 maladjustive behavior, 375–378, 383–384, 463
 sexual, 360
- Adjustment
 behavioral, and group problem solving, 48–50
 national character and, 439, 463, 481, 488
 personality, and leadership, 219–220
 social organization and, 627
- Adolescence
 culture and, 360
 national character and, 467–471
- Affect, national character and, 451
- Affection, evaluation and, 256
- Affective dissonance, 336, 348, 370
- Affective leader-member relations, 264
- Affective symbolic behavior, 352–355
- Affectivity, 306–307
- Affiliation, 35, 125, 251, 368, 374, 437, 447, 456, 487
- Age
 differences in coalition strategies, 136
 IQ measurement and, 343
 leadership and, 243
 social movements and, 588
 social structure and, 315–318
- Aggregates, 638
 collective behavior and, 507, 509, 517–518, 524, 527, 534, 541, 552, 555, 567–568, 584

- as groups, 206–208
 - man-vehicle, 530–531
 - temporary, 615, 629
- Aggression
 - autoplastic, 390
 - control of, 384
 - crowds and, 549–550, 580
 - culture and, 327–330, 352–353, 362–363, 370, 381, 384, 389–390
 - displacement of, 549–550
 - frustration and, 549–550
 - groups and, 30, 87
 - leadership and, 221, 259
 - national character and, 434, 442–444, 451, 472–473, 478
 - suppression of, 389
 - training, 362–363
- Aggressiveness, 245, 259
- Aging
 - noncongruence and, 480
 - social structure and, 293, 316–318
- Agonistic behavior, 612–616, 620–622, 624–627, 638
- Agonistic gestures, 328
- Alcoholism, 387–389
- Alienation, 294, 309, 370, 445
- Allelomimetic behavior, 612–616, 620–621, 625, 638
- Allomorphs, 354
- Altruism, 328
- Ambiguity, rumors and, 539
- Ambivalence, 350, 357, 369
 - of attitudes toward the leader, 254–255, 273
- Amok*, 381
- Anal character, 432, 443, 487–488
- Anger, 515, 624
- Animism, 333, 338–341, 356
- Anomie, 300–302
- Anonymity, crowds and, 531, 535–537, 541, 544, 553, 555, 576, 579–580
- Anthropological approaches to national character, 418–424, 441–442, 457
- Anthropology, psychological: *see* Cultural psychology
- Anti-competitive theory, 136
- Anti-Semitism, 549–550
- Anxiety
 - conformity and, 175
 - crowds and, 548
 - culture and, 327–330, 346, 352, 380, 386, 389
 - induction, 463
 - major forms, 450–451
 - national character and, 434, 442, 450–451, 463, 481, 491
 - reduction, and social organization, 618
 - separation, 548
 - sexual, 346
- Anxious worrying (O–), 219
- Apathy, 30, 305
- “Appetitive-perceptive agency” of the organism, 437, 439–440
- Approval seeking, 442
- Arousal
 - emotional, and crowds, 554
 - presence of others and, 3–5
- Arrow theorem, 60
- Art
 - as expressive behavior, 352–355
 - national character and, 478–479
 - styles, as cultural cognitive maps, 335
- Ascendancy
 - group problem solving and, 28–29
 - leadership and, 220
- Ascriptive systems, 287–288, 291, 294
- Aspiration, level of, 10, 12, 33, 40, 85, 220, 313–314
- “Assembly effects,” 116–117
- “Assertion training,” 24
- Assertiveness, leadership and, 220
- Assimilation, 539
- “Assumed similarity of opposites” (ASo), 263–264
- Attention
 - in crowds, 524
 - problem solving and, 3
- Attraction, 104–126, 172–173
- Attractiveness, power and, 169, 182
- Attribution
 - stability, 8–11, 14, 17, 21, 24, 26, 30, 36–38, 48, 51, 55–56, 64, 74
 - theory, 7–10
- Audience, 510, 524, 534
- Auditory acuity, culture and, 333
- Authoritarianism, 29, 223–224, 227–228, 243, 245–246, 266, 374, 449, 456, 458, 460, 476, 484, 508, 549–550
 - conscience and, 432
 - leadership and, 258–266, 273
- Authority
 - collective behavior and, 546–547, 549, 594
 - culture and, 341, 346
 - figures, and projection, 351
 - group structure and, 106, 110, 156–168
 - leadership and, 213, 234, 237, 245, 252, 254, 256, 264, 266, 268
 - patterns, and political behavior, 375

- positive and negative, 168
- relations, national character and, 448–449, 459–460, 463, 467, 475–476, 482, 484–485, 487
- social systems and, 308–309, 318
- Autoeroticism, culture and, 325
- Autosuggestion, 381
- Avoidance responses
 - social organization and, 617–618, 634
 - learning and, 620
- Awareness, social, 231
- Balance
 - degree of, 108
 - graph theory approach to group structure and, 105–109
 - matrix approach to group structure and, 112–113
 - sense of well-being and, 150
- Bargaining behavior, 35, 37, 43–47, 49, 59, 135–136, 165
 - integrative *vs.* distributive, 25, 36, 46–47
 - problem solving *vs.* distributive, 46–47
- Beauty, concepts of, and culture, 326
- Behavior
 - control, 2, 8, 49, 164–165
 - patterns, 611–613, 621–622, 627, 630, 632
 - homologous, 613
 - modification of, 621–622
- Behavioral systems, 612–616, 626, 638
 - agonistic, 612–616, 620–622, 624–627, 638
 - allelomimetic, 612–616, 620–621, 625, 638
 - elimimative, 612, 614–616, 638
 - epimeletic, 612–616, 626–627, 638
 - et-epimeletic, 612, 611–616, 638
 - exploratory, 612
 - ingestive, 612, 614–616, 620–621, 623, 638
 - investigative, 612–615, 627, 638
 - national character and, 465
 - sexual, 612–616, 620–622, 624, 630–633, 637
 - shelter-seeking, 612–615, 638
- Belief
 - growth and spread of, and crowds, 556–559, 561
 - self-reinforcement of, 591
- Betting behavior, 82
- Biological man, 291, 293, 316
- Biosocial man, 291, 639
- Bluffing behavior, 328
- Boomerang effect, 170, 177, 180
- Bottleneck situation, 582
- Boundaries
 - confrontation, 521
 - crowd, 520–523, 551, 554
 - maintenance mechanisms, 347, 522
 - permeability, 521
 - sharpness of, 521–523
 - solvency, 522
- Brainstorming, 69, 72–73
- Buddhistic component of personality, 438
- Bureaucracy
 - leadership and, 240–241
 - national character and, 469–470, 475
 - social structure and, 302, 308–310
- “Cabals,” 125
- Cannabis, 387–388
- “Cantometrics,” 355
- Capitalism, 484
- Career pattern, 288
- Categories
 - ascriptive, 287–288, 291, 294
 - conceptual, social origins of, 336–338
 - componential analysis, 337–338
 - language and thought, 336–338
 - statistical, and social structure, 287–288, 314–316
- Causality
 - crowds and, 517, 555, 559, 571, 601–602
 - interpretation of, and group integration, 32, 38, 45–46, 48, 51
 - multidirectional *vs.* unidirectional causal sequences, 467
 - national character and, 436, 467, 477, 490–492
 - naturalistic, 340
- Censorship, 355
- Centrality, of a communications net, 138
 - achieved *vs.* potential, 152
- Change, 168–184
 - capacity for, 464
 - individual, 297, 313, 316, 468–469
 - normative, 557
 - public dependent, 167–171, 177–178, 180–183
 - social, 357, 367–375, 384, 386–387, 418, 423, 426, 435, 450, 470, 480–481, 483–484, 486–487, 491–492, 508
 - crowds and, 508
 - and cultural, 357, 367–375, 384, 386–387
 - structural, 295, 297, 313, 317–319

- Character
 anal, 432, 443, 487–488
 moral, 442
 national, *see* National character
 oral, *see* Orality
 social, 418, 422, 425, 481, 549
 structure, and social structure, 449, 482, 484–485, 489
 traits and sanctions, 472–474
- Child-bearing practices, 466
- Child-rearing practices, 331, 351, 359–363, 368–369, 381–382, 385
 class differences, 311–312
 national character and, 423, 434–435, 451–452, 457, 460–469, 479, 489
- Chromosomal transmission of hereditary units, 629
- Circular reaction, 550, 554
- Circumcision rituals, 349
- Clinical assessment, national character studies and, 453–456
- Clinical-idiosyncratic mode of analysis, 442–444, 448
- Clinical psychology, national character and, 420–421, 442–444, 448, 453–456
- Cliques, 106, 108–109, 112–113, 124–127
- Closed systems, 594
- Coalition formation, 46–47, 50–51, 59–60, 126–137
 accommodative *vs.* exploitative strategies, 135–136
 anti-competitive theory, 136
 minimum resources or maximal control, 128–132
 personality and sex differences, 134–137
 random-choice or “utter confusion” theories, 137
 strictly rational theories, 132–134, 137
- Codability of experience, and language, 337
- Coercion, power and, 166, 168, 174, 177, 180–184
- Cognition
 culture and, 333–338
 cultural and social origins of conceptual categories, 336–338
 componential analysis, 337–338
 language and thought, 336–338
- Cognitive approaches to national character, 430, 432, 437, 439–440
- Cognitive balance, *see* Balance
- Cognitive conflict; *see* Information. conflicting
- Cognitive dissonance, 336, 348, 370, 373
 social influence and, 181–182
- Cognitive distortion, 172–173
- Cognitive mapping, culture and, 335, 355
- Cognitive processes
 individual problem solving and, 5
 similarity and information exchange, 20–21
- Cognitive restructuring, 180
- Cognitive structure, and transmission set, 24, 26
- Cognitive tuning, 24, 26
- Cognitive unconscious, 336
- Cohesiveness, 119–126, 237, 243, 262, 612–613, 615–617
 global, 124–125
- “Collateral intermediaries,” 318
- Collective behavior, 288, 354, 458–460, 507–603; *see also* Crowds and Social movements
 goals, 286
 norms, 299, 527, 529, 537–538, 550, 553–555, 557, 559–561, 586, 591
 values, 293, 299, 555–562, 590
- “Collective mind,” 543, 545
- Collective phenomena
 national character and, 423, 425–426, 431–432, 441, 457–460
 behavior, 458–460
 documents, 457–458, 461, 477–478, 489
- “Collective systems,” 109
- Commitment
 group problem solving, 23–25
 social movements and, 594
 social structure and, 294, 309
- Common fate, 31–32, 82, 117–118, 125
- Commonality of interest, group problem solving and, 13–33, 35, 59
- Communication, 120, 122–123, 125, 137–155
 crowds and, 538–540, 554, 557, 568, 603
 leadership and, 228, 231, 235, 243, 259, 263
 networks, 15–16, 18–20, 29, 52–53, 137–155, 242, 261
 All-Channel, 15–16, 19, 139, 141–147, 149–153, 155
 alpha, 139
 beta, 139
 centralized and decentralized, 19, 29, 138–143, 147–150, 152, 154–155
 Chain, 53, 138–142, 146, 154–155
 Circle, 19, 30, 52–53, 138–147, 149–155
 comcon, 16, 139, 146–147
 distance and centrality, 138, *see also* centralized
 hierarchies, 150–151

- information distribution, 149
- Kite, 139, 143
- "loose," 19
- noise, 148–149
- organizational problems, 150–154
- Pinwheel, 139, 142
- planning, 153–154
- reinforcement stress, 149–150
- "relay behavior," 53
- size, 140, 146–147
- Slash, 139, 142–143
- "Swapping" relay process, 154
- symmetric channels, 19–20
- Wheel, 16, 19, 52, 138–147, 149–155
- "Y," 138–142, 149, 155
- among primates, 633–634
- social organization and, 629, 633–634
- structure, and group problem solving, 19–20, 249
- Comparative research on national character, 441–463, 470
- Comparative studies of human behavior; *see* Cultural psychology
- Comparison level
 - for alternatives, 43, 45–46, 122
 - for outcomes, 10–11, 30–34, 47, 50
- Comparison *vs* normative functions of reference groups, 167, 175
- Compartmentalization, 370, 373
- Compensatory behavior, 304–305
- Competence, 61–65
 - civic, 456, 477
 - leadership and 236, 251
 - subjective, and political behavior, 440
- Competition
 - anti-competitive theory, 136
 - between groups, 31, 42–43, 46–47
 - coalition formation and, 136
 - culture and, 328, 335, 347
 - group and culture, 328
 - group problem solving and, 12, 33–47
 - national character and, 482–483
 - power and, 163
 - set, and crowd behavior, 582–583
 - sexual, 347
- Complementary, and group behavior, 302–304, 308
- Complexity
 - problem, and communication nets, 148, 155
 - task, and decision structure, 212
- Compliance
 - apathetic *vs* conscientious, 289
 - forced, 168, 181–182
 - power and, 166–168, 177, 181–184
 - social systems and, 300–302
- Componential analysis, 337–338
- Components of social action, 555, 559–561
- Computer
 - simulation, 53, 584
 - techniques for matrix manipulation, and group analysis, 112–113
- Conditioning
 - animal social behavior and, 620, 623
 - of hunger, 623
 - national character and, 435
 - socialization and, 347
 - verbal, 161–162, 169
- Conduciveness, structural, 556–558
- Confession, as cathartic therapy, 382
- Confidence
 - collective behavior and, 582–583
 - conformity and, 176
 - followership and, 245
 - group problem solving and, 20, 22–26, 62–63, 72
 - leadership and, 218–219
- Configurational approach to cultures, 358–361, 363–364, 366
- Conflict, 127
 - behavior, 328
 - class, 311
 - games, 127
 - of interests, group problem solving and, 12–13, 33–48, 50–51, 61, 67
 - mastery-submission, 381
 - "noncompetitive," 24
 - role, 286, 294, 489
- Conformity, 170–171, 174–175, 178–179
 - "anti-conformity," 168
 - "complete," 289
 - crowds and, 580
 - in expressive behavior, 353
 - leadership and, 224, 269–270
 - moral, 289
 - national character and, 422, 425, 442, 463, 470, 473, 475, 479, 489
 - overconformity, 301
 - social structure and, 289, 298, 300–301, 310
 - in support subgroups, 126
- Congruence, between modal personality and social system, 480–489, 492
 - ideal, 480–484
 - noncongruence, 480, 486–489
 - characterologically induced, 480, 488–489
 - institutionally induced, 480, 486–488
 - unstable, 480, 484–486

- Conjunctive and disjunctive requirements in
group problem solving, 13–15, 25–29,
43–44, 52, 54–59, 62, 68, 71, 85
- Conscience
authoritarian *vs.* humanistic, 432
crowds and, 546–548
- Consciousness; *see also* Unconscious factors
crowd behavior and, 543–544, 546
culture and, 335, 346, 357, 381–382, 386
ritual symbolism and, 386
- Consensual validation, 64
- Consensus
criterion of attribution validity, 7–9
group *vs.* individual performance and, 63–
65, 72, 74, 78–80
and group norms, 182
model, of response distribution, 57–58, 72
- Conservatism, leadership and, 223–224, 244
- Consideration, leadership and, 226, 228,
231–233, 235–237, 239, 258, 260,
263–264, 272–273
- Consistency
criteria of attribution validity, 7–9
in status dimensions, 157
“strain toward,” in culture, 461, 492
- Constellation-of-traits theory, 267–268
- Contagion, 158, 538, 543–545, 550–555,
563–567, 579, 582, 612, 625; *see also*
Allelomimetic behavior
emotional and behavioral, 258, 265
periodic, 566
Rashevsky’s theory of, 563–565
- Context, social, and development, 465, 467
- “Contingency theory,” 226
- Control
of aggression, 384
autocratic, 243
behavior, 2, 8, 49, 164–165
biological, 629
crowds and, 516, 543, 556, 558–559, 568,
579, 603
deliberate will (Q3), 219
fate, 8, 48–49, 164–165
hierarchies of, and group processes, 42
hormonal, 624, 629
impulse, 450
informational, 36–37, 39, 44
internal, 465, 469, 481
internal locus *vs.* external locus of, 11, 30, 51
leadership and, 243
love- *vs.* discipline-based, 475
maximal theories of coalition formation,
128–132
moral, 463, 469
national character and, 446, 450, 463, 465,
469, 471–475, 481
outcome, 36–37, 42, 44, 59, 64, 72
over-control, 389
population, 328
psychological, 385
self-control, 446, 543
social, 239, 289, 291, 300–302, 307, 352,
385, 471–474, 516, 556, 558–559,
568, 579, 603
deviance and, 289, 291, 300–302, 307
personality and national character, 471–
474
- Convergence, 545, 550–553
- Conversion, 534, 592–593
- Cooperation
group problem solving and, 12–33, 49,
67, 71, 85
set and crowd behavior, 582–583
- Coping
acculturation and, 374
emotional, 375
- Copresence, and problem solving, 3–6
- Copying behavior, 169
- Costs
external and expected decision, 58–59
social power and, 162–165
- Couvade, 350, 362
- Craze, 509, 538, 559
- Creativity, 290, 302, 311
leadership and, 252, 262, 264
- Credibility, 176
- Critical demands, and group tasks, 115
- Critical periods, 619, 636
- “Critical situations,” 591–592
- Cross-cultural research, *see* Cultural psy-
chology and National character
- Crowding
physiological development and, 330–331
psychological, 529
social organization and, 634
- Crowds, 507–584, 601–603
acceleration, 530
anonymity, 531, 535–537, 541, 544, 553,
555, 576, 579–580
audiences, 510, 524, 534
boundaries, sharpness and permeability,
520–523, 551, 554
case study (Watts), 570–577
causation, 517, 555, 559, 571, 601–602
collective decision-making, 538
composition of, 516, 536–538, 551
contagion, 538, 543–545, 550–555, 563–
567, 579, 582

- convergence, 545, 550–553
- craze, 509, 538, 559
- “crystals,” 532, 579
- density, 528–529, 533
- distillation effect, 532–533
- ecology, 520, 527–529
- emergent norm theory, 550, 553–555
- emotion in, 515, 544, 550–551, 553–555, 569
- experimental approaches, 580–584
- field experiments, 583
- formation, 532, 583–584
- growth, 531–532
- homogeneity, 543, 546–547, 550–555, 564–567
- information flow rumor, 538–540
- internal substructures, 523–524
- irrationality, 538, 544, 546, 568–570
- lamination effects, 523
- language and, 538, 541
- leadership, 515, 546–548, 554, 562, 567, 579
- Le Bon’s approach to, 542–545
- man-vehicle aggregates, 530–531
- mathematical approaches, 562–567
- “mental unity” of, 524, 543, 554
- mentality, 542
- methods for studying, 577–584
- mob, 509–510, 515–516, 521, 529, 537–538, 541–542, 544–545, 547, 549, 551–552, 562, 570, 572, 577, 579, 581, 601, 603
- movement of, 527–531
- numbers, 534–535
- “outsider” riots, 552
- panic, 509–510, 515–516, 527, 534, 538, 559, 563, 570, 578, 581–583
- pathological component, 547–548
- as perceived, 540–541
- phenomenology of, 573–576
- polarization, 521, 524–527, 579
- projective devices, 579–580
- protest, 515–517, 556–558, 561, 602
- psychoanalytic approach, 546–550, 555
- psychological, 543
- rationalization of, 529
- ring structure, 518–521
- riot, 509–510, 516–517, 522–523, 531, 535–539, 541, 547, 549, 551, 570–577, 601–602
- rules, 516, 553, 559, 562
- secondary sources, use of, 578–579
- separation of intention and consequence, 523, 535
- shape and structure, 518–521, 533
- simulation of, 581–583
- size, 524, 531–536, 566–567
- social movements and, 601–603
- sociological approach (Smelser’s), 555–562
- solvency, 522
- street, 510, 542–543
- survey approaches, 578
- theories of, 542–570
- violence, 517, 546, 552, 555, 569–570
- Cues
 - attribution and, 45–46
 - copresence and, 3
 - ecological validity of, 50
 - specificity of, and anchoring, 24
- Cults
 - “cargo,” 373–374
 - peyote, 374, 386–387
 - snake-handling, 386
- Cultural factors
 - in collective behavior, 529, 542
 - in conformity, 175
 - leadership and, 210, 246, 267
 - social structure and, 286
- Cultural phasing, 469
- Cultural “plot,” 458–459
- Cultural psychology, 323–391
 - acculturation, 325, 340, 357, 367, 369–375, 383–391
 - nativistic and revitalistic movements, 372–374
 - political behavior, 374–375
 - achievement motivation, 367–369
 - aggression, 327–330
 - anxiety, 327–330
 - child-rearing practices, 331, 351, 359–363, 368–369, 381–382, 385
 - cognition, 333–338
 - componential analysis, 337–338
 - conceptual categories, 336–338
 - language and thought, 336–338
 - emergency reactions and the nervous system, 327–330
 - information-processing mechanisms, 333–344
 - innovation, 367–369
 - intelligence, 343–344
 - language, 336
 - logical thought, 333, 336–344
 - Piaget method, 338–341
 - Rorschach findings, 341–342
 - mental health and social deviancy, 351, 360, 375–391

- assessments of psychotic and neurotic maladjustments, 375–378
 - cultural stress and acculturation, 383–391
 - culture-specific aberrant states, 379–382
 - delinquency, 390–391
 - drug-induced ego states, 387–389
 - ethnopsychiatric beliefs and practices, 378–383
 - murder and suicide, 389–390
 - native definitions, 378–379
 - motor behavior, 325–332
 - perception, 333–344
 - personality in, 323–325
 - physiology, 325–332
 - rage, 327–330
 - social or cultural change, 357, 367–375, 384, 386–387
 - social role expectations, 359–360, 363–366
 - socialization, 327, 329, 340, 342, 347–348, 359–367, 375, 383–384
 - of sexual expression, 325–327
 - symbolic expressive behavior, 345–359
 - affective: music, folklore, and art, 352–355
 - dream analysis, 356–357
 - prohibitions on sex, 345–348
 - projective techniques in study of, 334–335, 357–359
 - witchcraft, religious belief, and ritual, 348–352
 - value orientations, 359, 363–364, 366–367, 371
- Cultural “themes,” 458–459
- Culture; *see also* National character
- adolescent peer, 469–470
 - civic, 445, 456
 - ontogenetic theory of, 465
 - “personality and,” 420–421, 423, 429–430, 463, 478, 481; *see also* National character
 - political, 439–440, 445
 - psychological coherence of, 419, 424, 441, 492
 - “strain toward consistency” in, 461, 492
- Customs, 434
- Cycles, in graph theory, 106–108
- Death, culture and, 351–352
- Decision
- areas, in the family, 159–160
 - structure, 242
- Decision making, collective, 538
- Defection, social movements and, 595–596
- Defense mechanisms
- crowds and, 547–548
 - culture and, 364, 384, 386
 - groups and, 161
 - national character and, 448, 450, 452
- Deindividuation, 86
- Deliberate will control (Q3), 219
- Delinquency, culture and, 390–391
- Delusions, culture and, 377–378, 381
- Denial, 547
- Density, crowd, 528–529, 533
- Dependence
- crowds and, 546, 548
 - feelings, 349–350, 373
 - information, 6–12, 14, 17, 176
 - leadership and, 249, 259
 - legitimate power and, 179
 - needs and followership, 252, 254, 272, 487
 - outcome, 8
 - “power of,” 179
 - power and, in group structures, 105
 - public dependent change, 167–171, 177–178, 180–183
 - sleeping arrangements and, 362–363
 - social, 167
- Depression, culture and, 377–381
- Deprivation
- relative, 309
 - status, 368
 - systematic, 384
- Determinants, value-added, 555–562
- Development, among primates, 635–636
- Developmental approach, to national character, 426–429, 434–435, 451–452, 461
- Deviation, *see also* Social deviancy
- collective behavior and, 537, 580, 586–587
 - national character and, 419, 473, 483, 489
 - rejection and, 123, 174–175, 182
 - social structure and, 284, 291, 295, 298–302, 305, 310
 - stabilized and innovation, 269
 - “structured,” 302
- Differentiation
- functional, 306–307
 - individual, 293
 - of influence hierarchies, 209
 - to reduce inconsistency, 172–173, 175
 - responsibility, and groups, 209
 - of roles, 114, 209, 211, 238, 270–271, 273, 295–296, 548
 - social, 287, 293–294, 301
 - lateral vs. vertical, 287

- status, 157
- structural, 286, 292
- of structure-interaction, 215
- Diffusion
 - of responsibility, 580
 - social, 563
- Dionysian component of personality, 438
- Directedness
 - inner- *vs* outer-, 450
 - other —, 437, 447
 - tradition- *vs* inner- *vs* other-, 442
- Disaffection, psychology of, 595–596
- Displacement, of aggression, 329, 549–550
- Display behavior, 328
- Dissonance
 - affective, 336, 348, 370
 - cognitive, 181–182, 336, 348, 370, 373
 - social influence and, 181–182
 - psychocultural, 369
 - social movements and, 592
- Distance, within a communication net, 138
- Distillation effect, in crowds, 532–533
- Distortion
 - cognitive, 172–173
 - crowd, behavior and, 541
 - of perception *vs* of judgment, 170
 - rumors and, 539, 553–554
- Distributive justice, 48, 50, 130
- Division of labor, 66, 70, 84, 109, 114, 148, 157, 306
 - in behavior between sexes, 638
- Divorce, 295
- Doll-play techniques, 358
- Dominance, 156–160, 328
 - animal behavior and, 613, 616, 627, 631–632, 634, 636
 - in the family, 158–160
 - group problem solving and, 28
 - national character and, 469, 475, 485
 - needs, and leadership, 218–221, 244, 249, 263, 272
 - primitive, and motivation to lead, 249, 252
 - seeking, 329
 - in support subgroups, 126
- Domination, 213, 217, 230, 243
- Dreams, 547
 - analysis of, in anthropological investigation, 355–357, 378, 390
 - study of national character and, 453, 478–479
- Drive
 - cognitive, 336
 - innate, and culture, 327, 336
 - learned, secondary, 433, 437
 - level, and copresence, 3–5
 - primary, biological, 433, 437
 - social behavior and, 623–625
 - systems, 420, 434
- Drugs, and culture, 387–389
- Dynamic analysis, in field theory, 165
- Dynamic systems, psychoanalytic, 433
- Echolalia, 379
- Echopraxia, 379
- Ecology
 - collective behavior and, 520, 527–529
 - national character and, 466–467, 470
 - primate behavior and, 630–631, 633, 636–637
 - of social organization, 617
 - validity of cues and group processes, 50
- Economic structure, national character and, 436–437, 466–467, 470
- Effectiveness
 - leadership, 232, 236, 238, 250–251, 261, 263–264
 - of sanctions, 472–474
- Efficiency
 - of communication nets, 146, 150–155
 - followership and, 245
 - leadership and, 232, 242, 263
- Ego
 - culture and, 335–336, 341, 343, 381–382, 387–389
 - dissociation, 381
 - drug-induced states, 387–389
 - ideal and crowds, 546, 548
 - identity, 432, 450–451, 468
 - national character and, 430, 432–433, 439, 450–452, 465, 468, 481–483, 485
 - stages in development, 451–452, 468
 - strength, and leadership, 219
 - structure, 297
 - support, and crowds, 548
- Egocentrism, 335, 341
- Eliminative behavior, 612, 614–616, 638
- Emergency reactions, and the nervous system, 327–330
- “Emic” and “etic” units of analysis, 337, 354, 358
- Emotion
 - crowds and, 515, 544, 550–551, 553–555, 569
 - culture and, 327, 329
 - emotional reactions and social organization, 618, 621, 624–626
 - sympathetic induction of, 550

- Empathy
 - leadership and, 224–226
 - national character and, 440, 446, 457, 477
- Energy
 - conservation principle, 546–547
 - theory of mob, 562
- Entrepreneurial behavior, 368, 437
- Entropy (*H*), 149
- "Envy, status," 362
- Epidemics, 566
- Epimeletic behavior, 612–616, 626–627, 638
- Equalitarianism, 223–224, 245–246, 261, 307
- Equilibrium
 - contagion model and, 564–565, 567
 - in groups, 114
 - inner, and self concept, 450–451
- Erouicism
 - auto-, 325
 - culture and, 325, 347–348
- Escape, 582–583, 627–628
- "Esteem for least preferred co-workers" (LPC), 263–264
- Esthetics, 336
- Et-epimeletic behavior, 612, 614–616, 638
- Ethno-cognitive approach to language, 338
- "Ethno-logic," 338
- Ethnomedical practices, 387
- Ethnopsychiatric beliefs and practices, 378–383
- "Ethos" of a culture, 366, 423–424, 441
- Evaluation
 - group-centered, of leadership, 237
 - individual-centered, of leadership, 237
 - by integration of cognitive and cathectic meanings, 255–257
 - in interaction, 257
 - of leadership, 256–257
- Evolution
 - social, in animals, 628–630
 - theory of
 - and culture, 336–337
 - and social structure, 290–291
- Exaggeration, 539, 544
- Executive role, in group structure, 29
- Expectations
 - culture and, 336, 390
 - equivalence of, and society, 336
 - illusions and, 334
 - leadership and, 233, 236–237, 239, 246, 261–262, 265, 269–270, 272–273
 - mutual, roles and, 471
 - social structure and, 285–286, 288–289, 295, 299–300, 307, 309, 314, 318
- Experimentation, collective behavior and, 580–584
- Experimenter
 - bias, 180
 - power, 179–180
- Expertise
 - as a commodity in social exchange, 165
 - group problem solving and, 16, 22–23, 36–37
 - influence and, 168, 177–178, 180
 - power and, 167, 176–178, 181, 184
- Exploitative strategies of coalition formation, 135–136
- Exploratory behavior, 336, 612
- Expressive behavior
 - in culture, 345–359
 - affective music, folklore, and art, 352–355
 - dream analysis, 356–357
 - gestures as motor, 325
 - prohibitions on sex, 345–348
 - projective techniques in study of, 357–359
 - witchcraft, religious belief, and rituals, 348–352
 - institutions and national character, 477–479
- Extroversion-introversion, 81, 219, 221–223, 266
- F* scale, 29, 223–224, 246, 262, 456
- Facilities, as component of social action, 559–560
- Family
 - "big-family ideal," 481
 - culture and, 342, 346–348, 351, 361–365, 384–385, 388
 - influences, and national character, 461–467, 470, 475–476, 481–483
 - individual vs. societal functions, 464
 - among primates, 635
 - social structure and, 305–307
- Fanaticism, 593
- Fantasy
 - culture and, 352, 357
 - national character and, 437, 443, 448, 458–459, 468
 - oral-destructive, 468
 - seduction-withdrawal, 458–459
- Fascist personality, 374
- Fatalism, national character and, 446
- Fate control, 8, 48–49, 164–165

- Fear, 258
 - castration, 349
 - collective behavior and, 515, 520, 582
 - evaluation and, 256
 - of ghosts, 349, 351
 - latah* and, 380
 - physiological consequences of, 332
 - reactions, and learnings, 620–622
 - responses, and social organization, 617–622
 - of women, 351, 385
- Feedback
 - cybernetic mechanisms, 58
 - group performance and, 117–118
 - group processes, and, 20, 41, 77–78, 85
- Feeding practices, national character and, 462–463, *see also* Weaning
- Fertility behavior, and social class, 310, 314–315
- Field experimentation, on crowds, 583
- Field-theory approaches
 - to national character, 440–441
 - social power and influence and, 165–166
- Fighting
 - culture and, 328–329
 - social organization and, 615, 620, 624–627, 630–634, 636, 638
- Fixation
 - national character and, 434
 - “negative,” 434
 - oral, 434
- Fluency
 - of ideation, 222
 - word, 222
- Folklore, as expressive behavior, 352–355
- Folkways, 300
- Followership, 211, 224, 236, 244–246, 252–255, 271–272
- Food deprivation, and national character, 491
- Forces
 - own as induced, 166
 - resultant, 120
- Frame of reference
 - conversion to social movements and, 592
 - panic and, 578
- Friendship or popularity, 211
- Frigidity, culture and, 326
- Frustration, 305
 - aggression and, 370, 549–550
 - crowds and, 549–550
 - depression and, 381
 - group problem solving and, 31–32, 86–87
- “Functional autonomy,” 181
- “Functions” approach to folklore analysis, 354
- Gambling, 310
- Games
 - culture and, 329, 335, 354
 - fighting and, 329
 - minimax strategies, 34
 - mixed-motive, 127
 - “rules of the,” 127, 130, 133, 136
 - theory, and coalition formation, 132–134
 - theory, and group problem solving, 34
 - zero- or constant-sum, 34
 - zero-sum, 127
- Gene pool, 629
- Generalization
 - of influence, 176
 - national character research and, 453–455
 - social structure and, 295–296, 298
- Generation gap, 318
- Genetics
 - social behavior and, 626–628, 639
 - between species, 627–628
 - within species, 626–627
 - social structure and, 291–292
- Gestalt approaches to national character, 440–441
- Gestures, as motor expressive behavior, 325–326
 - agonistic, 328
- Ghosts, 351–352
- Goals
 - collective, 286
 - cultural, 313
 - deviance and, 300–301
 - groups and, 207, 209, 213, 217, 220, 226, 229–232, 243, 246–247, 253, 261, 268, 271
 - individual and collective values, 293
 - individual maximization, 291
- Graph theory, 171
 - cycles and “signs of cycles,” 106–108
 - directed or digraph, 106–107
 - graph strength, 106
 - graphic representations and, 105–106
 - linear graphs, 106–107, 109
 - paths and “similarity of paths” theorem, 106–107
 - signed or S-graph, 106–108, 112
 - structural balance and, 106–109
 - structural role theory, 109–111
- Graphic representations of groups, 105–106, 111–112
- Gratification
 - dependent, and shamanism, 382
 - need, 347

Grievances

expression of, and rioting, 577, 601–602
 leadership and, 232–233

Grooming behavior, 632–633, 635

Group problem solving, 1–88

bargaining, 25, 35–37, 43–47, 49, 59
 integrative *vs.* distributive, 25, 36, 46–47
 problem solving *vs.* distributive, 46–47
 “best-man” phenomenon, 61–65, 70
 between-group competition, 42–43, 46–47
 brainstorming, 69, 72–73
 Caplow’s model, 60
 centralized *vs.* distributed structures, 29
 cognitive similarity, 20–21
 “combination-of-contributions” model, 56–57
 hierarchical *vs.* equalitarian versions, 57
 commonality-of-interest or cooperative groups, 12–33, 35, 49, 59, 67, 71, 85
 communication structures, 19–20
 complementary information, 15–23
 concrete *vs.* abstract problems, 74
 conditions of information exchange, 15–21
 confidence, 20, 22–26, 62–63, 72
 conflict-of-interest or competitive groups, 12–13, 33–48, 50–51, 61, 67
 conflicting information, 23–27
 conjunctive and disjunctive requirements, 13–15, 25–29, 43–44, 52, 54–59, 62, 68, 71, 85
 consensus model, 57–58, 72
 coordination in, 74–76, 85
 decision models, 55
 distribution processes, 12–13
 efficiency and accuracy, 73–74
 expertise, 16, 22–23, 36–37
 extrasystemic modes of solution attainment, 47–51
 game-theoretic model, 60
 groups *vs.* individuals, 57, 61–88
 independence model, 57–58
 individual problem solving in a social context, 2–6, 72
 cognitive processes, 5
 perceptual processes, 3
 response production, 3–5
 information dependence, 6–12, 14, 17
 information distribution, 12–27, 30, 36–39, 47, 52–55, 58, 63–64, 68, 78
 initiation and persistence, 30–33
 integration or cohesion, 31–33
 member motivation, 84–88

member orientation, 40–41

mixed-motive case, 8, 35–47, 59

Model A, 55–57, 61–62, 70, 72

Model B, 56–57, 66

model for choice of a conjunctivity rule, 58–59

models of information distribution, 52–54

models of outcome distribution, 59–61

models of response distribution, 54–58

 group-actor model, 55

 voting model, 55

morale, 29–30

multiple-part *vs.* multiple-stage problems, 70

“Normative” model, 58, 80

organization time, 76–78

outcome distribution, 12–15, 31, 36, 39, 48, 50–51, 59–61

peer support, 86–87

phase hypothesis, 15

planning, 15–17

pooling effect, 65–71, 78

pressures toward uniformity, 25–27, 58, 71–73

rational model, 56–58, 72

response-distribution problems, 12–15, 27–30, 38–39, 48, 52, 54–59, 63–64

reward-structure variations, 38–40

risky-shift phenomenon, 26, 78–84, 86

 Bateson interpretation, 82–84

 diffusion of responsibility, 83–84

 participation factor, 83

 rhetorical interpretation, 82–84

status, 38, 41–42, 45

 training, 24, 69, 73, 76–77

Group structure, 102–185

attraction, 104–126, 172–173

authority, 106, 110, 156–168

 positive and negative, 168

balance and, 105–109, 112–113

change, 168–184

 public dependent, 167–171, 177–178, 180–183

coalitions, 126–137

 accommodative *vs.* exploitative strategies, 135–136

 anti-competitive theory, 136

 minimum resources or maximal control, 128–132

 personality and sex differences, 134–137

 power and resource minimization, 130–132

- random-choice or "utter confusion" theories, 137
- "strictly rational" theories, 132–134, 137
- cohesiveness, 119–126
- communication, 120, 122–123, 125, 137–155, *see also* Communication. networks
- field-theory approaches, 165–166
- formal *vs.* informal structure, 110–111
- influence, 120–124, 156–184
 - expert, 168, 177–178, 180
 - informational, 166, 168, 170, 183
 - learning approaches, 169
 - legitimate, 168, 170, 178, 183
 - negative, 168, 170, 175–178, 180, 182
 - referent, 168, 170, 172–173, 175–178, 180–183
- power, 105, 156–184
 - coercive, 166, 168, 174, 177, 180–184
 - conceptual approaches, 160–166
 - distribution of, and coalition formation, 128–137
 - expert, 167, 176–178, 181, 183–184
 - informational, 166, 180, 184
 - legitimate, 167, 178–181, 183–184
 - "minimization," 130–132
- competition, 328
 - in naturalistic settings, 156–160
 - negative, 168
 - pivotal power principle, 137
 - referent, 167, 171–176, 181–182
 - reward, 166, 168, 174, 177, 180–184
 - types of, 166–168
 - "usable," 165
- process-oriented or dynamic models of, 104, 113–119
 - Bales's equilibrium problem, 114
 - Cattell's "group synergy," 114–115
 - Collins and Guetzkow model, 116–118
 - Homans' internal and external system, 113–114
 - interpersonal behavior and task performance, 116–118
 - Roby and Lanzetta classifications, 115
- psychoanalytic approaches to power and influence, 161
- reinforcement approaches
 - groups and, 116–118, 122, 144, 149–150
 - to power, 161–162
- social exchange and power, 162–165
- sociometric status, 109, 112–113, 119–126, 134
- structural role theory, 109–111
- structure-oriented models of, 103–113
 - graph theory, 105–111
 - graphic representations, 105–106, 111–112
 - matrix representations, 111–113, 162–165
 - set-theory representations, 104–105, 111
- Groups; *see also* Collective behavior
 - "anchoring," 385
 - cohesion, safety and, 612–613, 615–617
 - compensatory mechanisms, 245
 - culture, personality and, 422–423
 - decisions, 55, 261–262
 - definitions of, 206–210
 - vs.* aggregates and classes, 206
 - interdependence of members, 207, 209
 - need satisfaction, 207
 - similarity, 207
 - discussion and decision, 182–183
 - effective *vs.* maintenance functions, 257
 - ethnic, 384
 - formation, 615–617
 - functional, 207–209
 - group mind, 546
 - "group mind fallacy," 289, 300
 - homeostasis, 245
 - input and output activities, 115
 - "instrumental," 239
 - locomotion and leadership, 214, 218, 227, 246
 - maintenance, 115–116
 - "memory," 53–54, 66–67
 - minority, 368, 388
 - nominal, 56, 65–66, 69, 73, 76
 - "open" *vs.* "closed," 242–243
 - organization formal and informal, 238–241
 - organization or "structure-in-interaction," 207–210, 230, 243
 - participation, and shamanistic "therapy," 382
 - peer, 307–308, 310, 391
 - permeability of, 242
 - primary, 302
 - reference, 167, 174–175, 308, 369–370, 385
 - size
 - leadership and, 242
 - models, 566–567
 - sociability, 230
 - social structure and, 289, 293–295, 302–310
 - structure, 295

- “synergy,” 114–115
- therapy, 161, 257
- types of, 305–310
- unitary *vs.* segmentary, 208
- Guilt
 - culture and, 363, 373, 377, 390
 - national character and, 442, 451, 469, 472–473
- Habits, national character and, 433, 435, 465
- Hallucinations, 378, 383, 387
- Headship, 212–215, 217, 233, 257–258, 266, 271–272
- “Hedonic tone” dimension, 242
- Height, 216, 330–331
- Heredity
 - leadership and, 265–266
 - Mendelian, 629
- Holistic theories, 296
- national character and, 440–441
- Homans’ internal and external system of group-structure analysis, 113–114
 - activity, interaction, sentiment, and norms, 113–114
- “Home range,” 617, 634
- Homeostasis, group, 245
- Homogeneity, crowd, 543, 546–547, 550–555, 564–567
- Homosexuality, culture and, 325–326, 385
- “Hord urgency factor,” 154
- Hormonal control, 624, 629
- Hostility, 30, 86, 583
 - culture and, 328, 352, 362, 364, 369
- Humor, culture and, 355
- Hypnotism, 544, 547
- Hypothalamus, 624
- Hysteria, 380–383
- Idea Constellations, 432
- Identification, 170–174, 177, 363, 385
 - acculturation and, 369
 - adaptation and, 440
 - with the aggressor, 350, 548
 - class, 311
 - cross-sex, 350, 362–363, 365
 - crowd behavior and, 546, 548, 554
 - delinquency and, 391
 - group, 209, 308, 312
 - with the leader, 249, 253
 - learning by, 434–435
 - national character and, 434–435, 440
 - occupational, 308, 310
 - organizational, 309
 - self-identification, 311
 - sex, 362, 384
 - suicide and, 389
- Identity
 - lack of, 576
 - social, 555
 - social movements and, 594–596
- Idiosyncrasy credit, 269–270
- Illness, beliefs concerning, 351–352, 363, 379, 434
- Illusions, culture and, 333–335
 - trapezoidal window, 334
- Imitation, 123, 158, 169
 - allelomimetic behavior and, 613
 - crowds and, 550, 553, 563–564, 580
 - culture and, 370, 379, 385
 - social organization and, 622
- Immunity, to contagion, 563
- “Impossibility theorem,” 60
- Impotence, culture and, 326
- Imprinting, 617–619
- Incentives, bargaining and, 46
- Incest taboo, 306, 345, 347–348, 389
- Income, social structure and, 312–313, 315
- Incorporation, 210, 548
- Independence, and group behavior, 303–304
- Individual behavior, 289–291, 296–297
 - explanation and prediction, 291
 - and the group, 293–295
- Individual differences
 - child-rearing practices and, 434
 - in exertion of power, 157
 - internal-*vs.* external-locus-of-control types, 11, 30, 51
 - leadership and, 219, 221
 - social structure and, 291
 - source *vs.* message orientation, 180
 - in use of rules for group problem solving, 50–51
- Individual differentiation, 293
- Individual goals, group problem solving and, 32–33, 40
- Individual-group comparison, 148
- Individual psychology, national character and, 418–423, 429, 450, 461
- Individualism, 482
 - “by default,” 302
- Indoctrination, 592
- “Indulgency patterns,” 295, 479
- “Infant indulgence,” and fear of ghosts, 349
- Inference, perceptual, and culture, 334

- Influence, 120–124, 156–184, *see also* Social influence
 differentiation in hierarchies of, 209
 expert, 168, 177–178, 180
 friendship or popularity, 258
 informational, 166, 168, 170, 183
 leadership and, 211–215, 223, 225, 239–242, 250–251, 256–258, 260, 262, 265–266, 270–271, 273
 learning approaches, 169
 legitimate, 168, 170, 178, 183
 negative, 168, 170, 175–178, 180, 182
 referent, 168, 170, 172–173, 175–178, 180–183
- Information
 acceptance, 6–12
 cognitive similarity, 20–21
 communication structures, 19–20
 complementary, and group problem solving, 14–23
 conditions of exchange, 15–21
 conflicting, and group problem solving, 23–27
 control, 36–37, 39, 44
 cultural transmission of, across generations, 622
 dependence, 6–12, 14, 17, 176
 distribution, 12–27, 30, 36–39, 47, 52–55, 58, 63–64, 68, 78, 149
 flow, and crowds rumor, 538–540
 informational power and influence, 166, 168, 170, 180, 183–184
 interdependence, 18–20, 34, 36, 44
 noise, 149
 processing mechanisms, 333–344
 redundancy, 19
 seeking, 6–12, 17
 state of, 8
 supportive and nonsupportive, 24–25
 verifiability, 21
 volunteering of, and group problem solving, 17–18
- Intrahuman animals, social psychology of, 611–639
 behavior patterns, 611–613, 621–622, 627, 630, 632
 homologous, 613
 modification of, 621–622
 behavioral systems, 612–616, 626, 638
 agonistic, 612–616, 620–622, 624–627, 638
 allelomimetic, 612–616, 620–621, 625, 638
 eliminative, 612, 614–616, 638
 epimeletic, 612–616, 626–627, 638
 et-epimeletic, 612, 614–616, 638
 exploratory, 612
 ingestive, 612, 614–616, 620–621, 623, 638
 investigative, 612–615, 627, 638
 sexual, 612–616, 620–622, 624, 630–633, 637
 shelter-seeking, 612–615, 638
 evolution of social behavior, 628–630
 genetics, 626–628
 between species, 627–628
 within species, 626–627
 human behavior, 637–639
 physiology of social behavior, 623
 agonistic behavior mechanisms, 624–625
 allelomimetic behavior mechanisms, 625–626
 drive concept, 623
 sexual behavior mechanisms, 624
 species differences, 623–624
 primate behavior, 630–636
 communication, 633–634
 development, 635–636
 dominance and leadership, 634
 families, 635
 territoriality, 634–635
 social learning, 620–623
 modification of behavior patterns, 621–622
 modification of social motivation, 620–621
 organization of behavior through learning, 622–623
 social organization, 613–619, 629–636
 development of, 617–619
 ecology of, 617
 group formation and cohesion, 615–616
 relationship theory, 616–617
- Ingestive behavior, 612, 614–616, 620–621, 623, 638
- Ingratiation, 467
- Ingroup-outgroup ratio, 120–121, 124
- Inhibition, national character and, 478
- Initiation
 of action or structure, and leadership, 228–232, 235–237, 243, 251, 258, 260, 263
 rites, 349–350, 362
- Initiative, followership and, 245
- Innate factor, and culture, 327, 336, 339, 344
- Inner- vs. other-directedness, 354

- Innovation, 300–301
 - culture and, 367–369
 - evasive, 301
 - social structure and, 318–319
- Insight, followership and, 245
- Instincts
 - national character and, 430, 432
 - social structure and, 290, 300
- "Institutionalized evasions," 295
- Institutions, 286
 - collective behavior and, 507–508, 555, 569, 577, 592, 596–597
 - expressive, 477–479
 - national character and, 419, 474–479
 - personality and functioning of, 474–479
 - political, 476–477
 - primary and secondary, and culture, 360
 - total, 309
- Instrumental adequacy of psychological traits, 473
- Instrumental closure, 315
- Intelligence, 290
 - cross-cultural studies of, 343–344
 - leadership and, 217–218, 223–226, 244, 266
 - social, 223
- Intention
 - to influence, 258
 - separation of, and consequences, 523, 535
- Interaction
 - in Homans' group-structure analysis, 113–114
 - Process Analysis, Bales's, 114, 125–126
 - theory of leadership, 268–271, 273
- Interests
 - common, and group problem solving, 13–33, 35, 59, *see also* Mixed-motive group
 - conflicting, and group problem solving, 12–13, 33–48, 50–51, 61, 67
- Internalization, 177
 - Acculturation and, 370–371, 385
 - of cultural prohibitions, 345
 - of moral directives, 362–364
 - national character and, 419, 421, 440, 471, 473–474, 479, 481–483
 - of values and norms, 289, 300, 307, 309
- Interpenetration, of crowds, 522
- Interpersonal relations, 119–155
 - attraction, sociometric status, and cohesiveness, 119–126
 - authority, 106, 110, 156–168
 - coalitions, 126–137
 - communication, 120, 122–123, 125, 137–155
 - influence, 120–124, 156–184
 - models of, 103–119
 - power, 105, 156–184
 - sensitivity, and leadership, 224–226, 231, 235
 - task performance and, 116–118
- Introjection
 - of aggression-guilt, and Russian character, 472
 - crowd behavior and, 546
 - culture and, 351–352, 381, 383
- Investigative behavior, 612–615, 627, 638
- Invincibility, sense of, and crowds, 553
- Involvement
 - emotional, and social movements, 594
 - salience of roles and, 304, 308
 - social, 294–296, 304–305
- "Inwardness," 446
- Irrationality
 - crowds and, 538, 544, 546, 568–570
 - internal vs. external criteria, 569
 - social movements and, 585–588
- Isolation, rearing in, 620–622
- J*-curve rule, 298–299
- Jealousy
 - culture and, 326, 390
 - sexual, 637–638
- Judgmental distortion, 170
- Justice, "immanent," 339–340
- Kinship systems, 306, 310, 351, 380
- Koro*, 380
- Labor-force participation rates, 315
- Lamination effects, in crowds, 523
- Language
 - crowds and, 538, 541
 - descriptive-interpretive, and modal personality, 429
 - function of, 328
 - human behavior and, 637
 - the risky shift and, 82
 - structure, and culture, 336–338
 - symbolic analysis and, 345, 354
 - syntax of, 336
 - and thought, 336–337
- Latah*, 379–381
- Latency period of psychosexual development, 327, 348, 360, 468

- Laughter, leadership and, 222
 "Law of large numbers," 565
 "Law of mental unity of crowds," 543, 554
 Laws, control and, 300
 Leader-follower relationships, 616
 Leadership, 205–273
 appointed, 225, 229, 266
 arbitrary, 260–261
 attempted and successful, 42
 authoritarian, 258–266, 273
 autocratic, 30, 243–244, 246, 258
 "central person" concept, 210–211
 climate, 260
 crowds and, 515, 546–548, 554, 562, 567, 579
 definitions, 210
 democratic, 258–265, 273
 description and analysis of leader behavior, 215–238
 description *vs.* evaluation, 235
 dimensions of leader behavior, 228–232
 discrepancy score, 235, 238
 domination *vs.* 213, 217, 230, 243
 effects of leadership styles, 258–265
 emergence of, 265–266, 273
 emergent, 224, 229, 250, 262–264, 266
 emotional relation of leader to followers, 255–258
 expertise and, 16
 focused *vs.* distributed, 215, 272
 followership, 211, 224, 236, 244–246, 252–255, 271–272
 formal and informal, 240
 free *vs.* developmental, 27
 generality *vs.* specificity of, 246–248
 groups, 206–210
 vs. headship, 212–215, 217, 233, 257–258, 266, 271–272
 hierarchies, 215
 ideal or charismatic, 256
 laissez-faire, 258, 260
 leader behavior and evaluations of leadership, 232–238
 criterion problem, 238
 group-centered evaluation, 237
 individual-centered evaluation, 237
 leadership traits, 216–228
 adjustment, 219
 confidence, 218–219
 conservatism, 223–224, 244
 dominance, 218–221, 244, 249, 252, 263, 272
 empathy or interpersonal sensitivity, 224–226, 231, 235
 extraversion-introversion, 219, 221–223, 266
 height, 216
 intelligence, 217–218, 223–226, 244, 266
 situational relativity, 226–227
 weight, 216–217
 network position and, 18
 organization and, 207–210, 230, 243, 256
 formal and informal, 238–241
 incipient, 209
 "participatory *vs.* supervisory," 259
 perception of the leader, 233–238, 241–242, 260, 268, 273
 among primates, 634
 problem solving, 217–219, 222, 266
 "projected," 252
 psychodynamics of leader-follower relation, 248–258
 related group factors, 238–248
 bureaucracy, 240–241
 communication, 228, 231, 235, 241–243, 259, 263
 variability in group dimensions, 242–243
 satisfactions of followership, 252–255
 ambivalence toward the leader, 254
 assistance in problem solution, 252–253
 dependency needs, 254
 vicarious satisfaction through identification, 253
 satisfactions of leadership, 248–251
 situational approach, 246–248
 social-emotional *vs.* task, 211–212, 232, 254
 sociometric or popular, 211–212, 218–219, 221
 succession phenomena, 265–267, 270, 273
 theories of, 267–271
 constellation-of-traits theory, 267–268
 interaction theory, 268–271, 273
 unitary-trait theory, 267
 unsought, 251–252
 "Learned significances," 440
 Learning
 approaches to social influence, 169
 cohesiveness and, 124
 "local," and group organization, 153
 national character and, 419, 430–431, 433–435, 441, 471

- social and animal behavior, 616, 620–623, 628
- social interference and, 3–4
- social structure and, 290
- vicarious, 169
- Legitimacy
 - influence and, 168, 170, 178
 - of leadership, 213
 - power and, 167, 178–181, 183–184
- Level of aspiration, 10, 12, 33, 40, 85, 220, 313–314
- Leveling, 539, 543
- Libido, crowds and, 546–547
- Life-cycle stages, and social structure, 316–317
- Liking, 122
 - leadership and, 212, 221, 239
- Lineage systems, 306, 318
- Linguistics, culture and, 336–338
- "Local rationality," 53, 58
- *
- Magic, 350, 378, 383, 386, 479
- Maintenance, group, 115–118
- Maintenance systems, national character and, 466–467
- Man-nature value orientation, 435–436
- Mands *vs.* tacts, 36
- Manifest *vs.* latent functions, 352, 356, 378, 478
- Marginal-intersection hypothesis, 59
- Marginality, and crowds, 536
- Marihuana, 387–388
- Marriage, culture and, 326
- Masculinity-femininity, and the self concept, 450
- Masochism, 389
- Mass media
 - crowd behavior and, 539
 - national character and, 470
- Mass phenomena; *see* Collective behavior, Crowds and Social movements
- Mastery, mental health and, 381
- Matched-dependent behavior, 169
- Mathematical theories of crowds, 562–567
 - birth-and-death model, 567
 - deterministic *vs.* stochastic (probabilistic), 565–566
 - group-size models, 566–567
 - Rashevsky's theory of contagion, 563–565
- Matrifocality, 364–365, 384
- Matrix representation, of relations, 111–113, 162–165
- Maturation, culture and, 331–332, 339, 342, 376
- "Mazeway" theory for cross-cultural analysis of cognitive systems, 336, 364, 369, 373
- Meaning
 - cognitive and cathectic, and leadership, 255–257
 - common core of cultural plots, 459
 - "intentional," and componential analysis, 338
 - subjective psychological, and culture, 337
- Membership dimension, and leadership, 230, 235, 239–240, 243
- Mental health, culture and, 375–391
 - assessment of psychotic and neurotic maladjustments, 375–378
 - cultural stress and manipulation, 383–389
 - culture-specific aberrant states, 379–382
 - drug-induced ego states, 387–389
 - ethnopsychiatric beliefs and practices, 378–383
 - native definitions, 378–379
- Mental illness, collective behavior and, 538, 586–587
- Methodological approaches to the study of crowds, 577–584
 - experimental approaches, 580–584
 - projective devices, 579–580
 - secondary sources, 578–579
 - simulation, 581–583
 - survey techniques, 578
- Methodological problems
 - in culture research, 339–340
 - in national-character research, 423, 425, 452–463
 - child-rearing systems, 452, 460–463
 - collective behavior, 452, 457–460
 - personality assessment of individuals, 452–457
 - social structure and, 295–297
- Methods-time measurement analysis of communication hierarchies, 151, 154
- Milling, 520, 550
- Minimax strategies, 34
- Mixed-motive group, relationships, 8, 35–47, 59, 127
- Mob, 509–510, 515–516, 521, 529, 537–538, 541–542, 544–545, 547, 549, 551–552, 562, 570, 572, 577, 579, 581, 601, 603
- Mobility, 384, 391
- Modal personality, 352–353, 355, 360, 372
 - national character and; *see* National character
- Modeling, 123, 169, 618
 - crowds and, 571, 580

- Models
 role, 466, 470–471, 473
- Moral man, 301
- Morale
 cohesiveness and, 122
 communication nets and, 140–146
 group problem solving and, 29–30
 leadership and, 233, 239, 241, 243, 259, 262–263, 265, 273
- Morality
 moral character types, 442
 moral control, 463
 relativistic, 481–483
 restrictive, 451
- Mores, 300
- Mortality conditions, 316–317
- Mouteme, 354
- Motivation
 abstract thought and, 340, 342, 344
 achievement, 367–369, 436–437, 447, 456, 467, 473, 477
 affiliation, 368, 437, 447, 456, 487
 behavioral systems and, 613, 620–621, 625
 conditioning and, 623
 expressive, and cultural prohibitions on sex, 345–348
 to lead, 248–251
 leadership and, 259–260
 to maintain a group, 31
 member, and group problem solving, 84–88
 to membership in social movements, 597
 mobilization of, 559
 modification of, 620–621
 morale and, 29–30
 performance and, 3–6
 power and, 368, 437, 447, 456
 roles and, 364
 sanctions and, 473
 social structure and, 314–316
 status, 45
 theory, and culture, 336
- Motives
 crowd behavior and, 547, 573–577, 581
 dreams as, 356–357
 functional autonomy of, 437–438
 mixed, and group problem solving, 8, 35–47
 national character and, 430, 433–440, 457, 473, 481, 485
 social, and performance, 4
 traits and ingroup-outgroup choices, 47
- Motor behavior and cultural influences, 325–332
- Mourning, culture and, 332
- Movies, in assessment of national character, 458
- Multitest strategy, in national-character research, 457
- Murder, culture and, 389–390
- Music, as expressive behavior, 355
- Myths, 354–356, 479
- Narcissism, 546
 “role,” 390
- National character, 361, 418–492
 anthropological approaches, 418–424, 441–442, 457
 cognitive approaches, 430, 432, 437, 439–440
 definition problems, 423–428
 developmental approach, 426–429, 434–435, 451–452, 461
 holistic theories, 440–441
 influence of the sociocultural system, 464–471
 early childhood, 464–466
 extrafamilial influences, 466–467
 family influence, 464–467, 470
 postchildhood influences, 467–471
 influence on the social system, 471–489
 institutional functioning, 474–479
 social control (social sanctions), 471–474
 social systems and congruence, 479–489
 intra- vs. international differences, 457
 learning-theory approaches, 419, 430–431, 433–435, 441, 471
 methodological problems, 423, 425, 452–463
 child-rearing practices, 452, 460–463
 collective adult phenomena, 452, 457–460
 personality assessment of individuals, 452–457
 personality-theory approaches, 428–441
 psychoanalytic approaches, 419–421, 429–434, 441–443, 450–452, 454, 457, 461, 464–466, 468–469, 477–478
 sociological approaches, 421–422
 standard-analytic-issues approach, 447–452
 authority relations, 448–449
 primary dilemmas or conflicts, 451–452
 self-concept, 450–451
 theoretical problems, 441–452

- unimodal *vs* multimodal conception, 427–428, 457, 461–463, 492
- value-motive-trait theories, 435–439
- Nativistic movements, 372–374
- Nature-nurture issue, 297
- Needs
 - for acceptance, 438
 - achievement, 81, 125, 135, 220, 251, 436–437, 447, 456, 467, 473, 477
 - for affiliation, 35, 125, 251, 368, 374, 437, 447, 456, 487
 - dependency, and followership, 252, 254, 272, 487
 - dominance, and leadership, 218–221, 244, 249, 263, 272
 - ego, and leadership, 250
 - to evaluate, 171–173
 - of followership, 252–255
 - gratification, and socialization, 347
 - groups and, 207, 223, 226–227, 258–259, 268–273
 - individual, and groups, 114
 - interpersonal, and groups, 114
 - for meaning, 438
 - national character and, 432, 438
 - for power, 249, 374, 437, 447, 456
 - to project negative feelings, 351
 - roles and, 368
 - self-oriented, 40–41
 - for self-respect, 438
 - social movements and, 589, 591–592, 594–595, 602
 - for social support, 174
 - society and, 432
 - status
 - followership and, 253
 - leadership and, 250–251
 - for submission, 374
 - systems, 166
- “Negritude,” 385
- “Neo-Freudian” approaches to national character, 430, 432–433, 465
- Nervous system, and emergency reactions, 327–330
- Nervous tension (Q4), 219
- Neurosis, cross-cultural assessment of, 355, 375–378, 386
- “New ethnography,” 337
- Noise, in communication channels, 148–149
 - channel, coding information, 149
- Normative accumulation principle, 301
- Normative *vs* comparison functions of reference group, 167, 175
- “Normative justifiability,” 58
- Norms
 - behavioral, and group resistance to arbitrary authority, 87
 - collective, 299
 - collective behavior and, 527, 529, 537–538, 550, 553–555, 557, 559–561, 586, 591
 - cultural, 419, 421–422, 470, 472–473, 492, 529
 - of family continuity, 306
 - group, 113, 124, 182, 267, 269–270
 - influence through appeals to, 34
 - national character and, 419, 421–422, 470, 472–473, 492
 - norm-oriented social movement, 559, 561
 - normative change, 557
 - normlessness, 301
 - parity, 130, 132–133, 137
 - power and, 167, 179
 - reciprocity, 179
 - social responsibility, 179
 - social structure and, 286, 288–289, 291, 294–295, 299–302, 307, 316
 - theory of emergent, 550, 553–555
- Novelty, and groups, 69
- Nurturance, 135
- Obedience, 178
 - crowds and, 547, 554
 - leadership and, 258
- Obsessive-compulsive personality, 361, 386
- Obstacles, and groups, 116–118
- Occupations
 - bureaucratic *vs* entrepreneurial, 312
 - entrepreneurial *vs* organizational, 466
 - national character and, 466, 469–470, 474–475
 - roles in, 474–475
- Oedipus complex
 - culture and, 345–346, 348, 350, 353, 362
 - national character and, 431, 465, 478
- Oikia, 635
- “Ontogenetic theory of culture,” 465
- Optimism, national character and, 446, 455–456
- Orality
 - anxiety and, 434
 - culture and, 327, 361, 381, 383
 - feelings, 381, 383
 - fixations, 434
 - national character and, 432, 434, 443, 462, 483, 486–488, 490
 - neurophysiology and, 327
 - oral character, 361, 432, 486–488

- Organization, 207–210, 230, 243
 administrative, and social systems, 308–310
 colonial, and social behavior in animals, 628–629
 custodial, 309
 family, among primates, 635
 formal and informal, 238–241, 272, 307–308
 incipient, 209
 social, 613–619, 629–636
 social disorganization, 529
- Orientations
 activity, 435–436
 cognitive, affective, and evaluative, and political cultures, 440
 generalized, and national character, 432
 inner-*vs.* outer-directed, 450
 man-nature, 435–436
 participant, subject, and parochial, and political culture, 440
 psychological, 439–440
 time, 435–436
 toward the self, 436
 value, 435–436, 439, 442, 446
 dominant and variant modes, 436
 variant profiles, 492
- Outcomes
 comparison level for, 10–11, 30–34, 47, 50
 control, 36–37, 42, 44, 59, 64, 72
 cost-reward, 162–165
 dependence, 8
 distribution, 12–15, 31, 36, 39, 48, 50–51, 59–61
 groups and, 120–123, 127, 159
 information seeking and, 10
 interdependence, 13, 36
- Overlapping membership, 303–304
- Overvaluation of group products, 34, 46–47
- Panic, 509–510, 515–516, 527, 534, 538, 559, 563, 570, 578, 581–583
 aberrant states and, 379
- Paranoid, crowds and, 547–548
- Paranoid projection, culture and, 377
- Parity norm, 130, 132–133, 137
- Parkinson's law of the "rising pyramid," 158
- Participation
 differential, 567, 579
 group performance and, 83–84
 leadership and, 247, 261
 thinking, 338, 340
- Paths, in graph theory, 106–107
- Patriarchy, 256
- Pattern recognition, 299
- Patterns of action, social structure and, 284–286, 288, 298–300
- "Pecking order," 156, 162, 249
- Peer groups, 307–308, 310
- Peer support, 86–87
- Penetration *vs.* accretion to group boundaries, 521–522
- Perception
 of crowds, 540–541
 culture and, 333–344
 depth, culture and, 334
 individual problem solving and, 3
 of instrumentality, 256–257
 of the leader, 233–238, 241–242, 260, 268, 273
 selective, and social movements, 595
 social, 223, 226, 242
 and social organization, 618
- Perceptual-cognitive aspects of personality, 437, 439–440
- Perceptual distortion, 170
- Perceptual inference, culture and, 334
- Permeability, of groups, 242
- Permissiveness, 311, 331
- Persecutions, 597
- "Personal impotency," 440, 446
- Personality
 adolescent and postchildhood, 467–471
 "areal" *vs.* "tribal," 427
 assessment of individuals, in study of national character, 452–457
 authoritarian *vs.* equalitarian, 449
 "basic," 360, 418, 424–425, 430–432, 436, 478–479, 486
 "basic components" Dionysian, Promethean, and Buddhist, 438
 child *vs.* adult, in assessment of national character, 426–429, 434–435, 460–463, 465, 467–470, 489
 child development, 464–467
 extrafamilial influences, 466–467
 family, 464–467, 470
 coalition formation, differences in, 138
 conformity, differences in, 175
 contexts of learning and, 433
 crowds and, 543–544, 553, 603
 culture and, 420–421, 423, 429–430, 463, 478, 481; *see also* National character and Cultural psychology
 dynamics, 439
 fascist, 374
 functional theory of, in culture, 352, 386

- group, 444–445
- individual, 418–423, 425, 430–431, 435, 438, 441–442, 452–458, 463, 477
- information dependence and, 10–11
- institutional functioning and, 474–479
- leadership and, 217
 - adjustment, 219
 - confidence, 218–219
 - conservatism, 223–224, 244
 - dominance, 218–221, 244, 249, 252, 263, 272
 - empathy or interpersonal sensitivity, 224–226, 231, 235
 - extraversion-introversion, 219, 221–223, 266
 - intelligence, 217–218, 223–226, 244, 266
 - situational relativity, 226–227
- “mobile,” 440
- modal, 352–353, 355, 360, 372; *see also*
 - National character
- obsessive-compulsive, 361, 386
- patterns, 424, 427–428
- personality-theory approaches to modal
 - personality, 420–421, 423, 428–441
 - cognitive, 439–440
 - holistic theories, 440–441
 - learning, 433–435, 441
 - psychoanalytic, 429–433, 441
 - value-motive-trait theories, 435–439
- “situational” type, 450
- social control and, 471–474
- social structure and, 284, 291–292, 294–297
- social systems and, 479–489
- “status,” 427
- structure, 424–425, 430–432, 435, 441, 449, 451, 460–461, 463–464
 - socially required *vs* actual, 425
- types, 295–296
 - as profiles, 438
 - variables, and IQ tests, 344
- Persuasiveness, risky shift and, 81
- Peyote, 387
 - cult, 374, 386–387
- Phase hypothesis of group processes, 15
- Phenomenology of crowds, 573–576
- Pheromones, 629
- Physiological plasticity, 330
- Physiology
 - cultural influence and, 325–332
 - of social behavior, 623–626
- Piaget method, applied cross-culturally, 338–341
- Pibloktoq*, 379
- Play, 622
- “Pluralistic ignorance” and risk taking, 80
- Pluralistic systems, 302, 304, 313
- Polarization
 - crowd, 521, 524–527, 579
 - leadership and, 238
- Political behavior, personality, and culture, 372, 374–375
- Political factors, national character and, 439–440, 445, 456, 470, 476–477, 485–486
- Polygynous *vs* monogamous societies, 346, 348, 363
- Pooling effect in groups, 65–71, 78
- Population
 - concept, 629
 - control, 328
 - density, 529, 531
 - mathematical models of contagion and, 563–566
 - source *vs* sink, 563
- Potency, feelings of, and collective behavior, 576
- Power, 105, 156–184
 - and ability in groups, 42
 - coercive, 36, 166, 168, 174, 177, 180–184
 - competition and, 34
 - conceptual approaches, 160–166
 - culture and, 339, 349–351, 367–368, 374
 - distribution of, and coalition formation, 128–137
 - expert, 36, 167, 176–178, 181, 183–184
 - external moral, 339
 - felt, and comparison levels, 11
 - husband-wife, 158–159
 - informational, 166, 180, 184
 - invincible, and crowds, 544
 - leadership and, 240, 249–251, 254–255, 259, 262, 264–266, 268, 270–271
 - legitimate, 167, 178–181, 183–184
 - “minimization,” 130–132
 - motive or need for, 249, 368, 374, 437, 447, 456
 - national character and, 482, 485
 - in naturalistic settings, 156–160
 - negative, 168
 - perceived, 239–240
 - pivotal power principle, 137
 - posiuton, 264
 - referent, 167, 171–176, 181–182
 - reward, 36, 166, 168, 174, 177, 180–184
 - “usable,” 165
- Preclusiveness, and group behavior, 303–304, 308, 312

- Prediction
 of behavior and social structure, 291, 295–298, 304–305, 308, 310–312, 314
 mutual, 364
- Prejudice, 352, 508
- Presence-absence criterion of attribution validity, 7
- Pressures
 toward nonuniformity, 175
 toward uniformity, 25–27, 58, 71–73, 172–175
- Priestige
 followership and, 245, 254
 leadership and, 250, 252, 255
 occupational, 308, 311–312
 as a social aspiration, 473–474
 “suggestion,” 180
- Primate behavior, 630–636
- Primogeniture, 467
- Prisoner's Dilemma, 47
- Problem solving, *see* Group problem solving
- “Procedural negotiation,” 39–40
- Process-oriented models of group structure, 104, 113–119
- Production emphasis, and leadership, 231–232
- Productivity ratios, 73–74
- Projection, 548
 culture and, 351–352, 354, 377–378, 383
 national character and, 485
 paranoid, 377
- “Projective systems,” 478–479
- Projective techniques
 national-character studies and, 453–454
 in the study of crowd behavior, 579–580
 in the study of culture, 357–359
- Promethean component of personality, 438
- Prominence, leadership and, 230, 254
- Proximity, attraction and, 123
- Protest, 515–517, 556–558, 561, 602
- Proximity, 557
- Psychedelics, 387
- Psychiatry, culture and, 376
 ethnopsychiatry, 378–383
- Psychoanalytic approaches
 to collective behavior, 546–550, 555
 to cultural research, 335, 345–346, 349–350, 352–357, 360, 374, 389
 to national character, 419–421, 429–434, 441–443, 450–452, 454, 457, 461, 464–466, 468–469, 477–478
 to power and influence, 161
 to social structure, 291
- Psychological coherence of cultures, 419, 424, 441, 492
- Psychological definition, in field theory, 165
- Psychological “lag,” in acculturation, 369
- Psychosexual development, 327, 345–348, 360, 383
 national character and, 431–432, 465, 468
- Psychosis
 catatonic *vs* paranoid symptoms, 385
 cross-cultural assessments of, 375–378
 organic and toxic *vs* functional, 376
 Windigo, 381
- Psychotherapy
 cultural, 373
 ethnopsychiatry, 378–383
 psychiatry, 376
- Punishment
 corporal, cross-cultural, 362
 national character and, 433, 435, 460, 463, 470, 472–473
 power and, 168–171, 181–183
 social organization and, 618, 627
- Race theory, 420, 427
- Radicalism-conservatism (Q1), 224, 244
- Rage, culture and, 327–330
- Rapport, influence and, 257–258
- Rationality
 crowds and, 538, 544, 546, 568–570
 “local,” 53, 58
 national character and, 439–440
- Rationalization, of crowd behavior, 529
- Reactance, 168
- Realism, culture and, 340
- Reality
 delusions and, 377
 orientation of the ego, 482–483
 psychological, of componential analysis, 338
 schizophrenia *vs* magic and, 386
 social
 groups and, 21, 167
 social structure and, 295
 social movements and, 587–589, 591–592, 594
 structural, of componential analysis, 338
 testing, 339, 341–342
- Rebellion, 300, 536
- Receptivity, national character and, 446
- Reciprocity norm, 179
- Reductionist fallacy, social structure and, 296, 300
- Reference
 groups, 167, 174–175, 308, 369–370, 385

- influence and, 168, 170, 172–173, 175–178, 180–183
- power and, 167, 171–176, 181–182
- Reflexivity, of relations, 104
- Reforms, 597
- Regression, 347, 374, 381, 383
 - crowds and, 546
- Reinforcement
 - groups and, 116–118, 122, 144, 149–150
 - motivation and, 620–621
 - national character and, 435, 469
 - power and, 161–162
 - risk taking and, 82
 - social organization and, 618, 625–626
 - stress, 149–150
- Rejection, 172
 - from the group, 32, 123, 174–175, 181–182, 221, 223, 251
 - sociometric analyses and, 112, 146, 263
- Relationships
 - care-dependency, 616
 - dominance-subordination, 616
 - leader-follower, 616
 - liking and unit-forming, 104–106, 108
 - mutual-care, 616
 - sexual, 616
 - social, 616
 - theory of, 616
- “Relay behavior,” 53
- “Release” symptoms, 485
- Religion
 - culture and, 348–352, 386–387
 - national character and, 467, 478–479
- Religiosity, 554
- Repetition, and influence, 545
- Repression, 355, 357–358
 - crowd behavior and, 547, 555
- Requiredness criterion of social character, 425
- Resistance to persuasion, 551
- Resources
 - distribution of, and coalition formation, 128–137
 - minimization of, theory of coalitions, 130–132
 - scarce, and panic, 581–582
- Response
 - coordination, 74–76, 85
 - distribution problems, and group problem solving, 12–15, 27–30, 38–39, 48, 52, 54–59, 63–64
 - cooperative groups, 27–30
 - production, and individual problem solving, 3–5
- Responsibility
 - differentiations, in groups, 209
 - diffusion of, hypothesis of the risky shift, 83–84, 86
 - felt, and member motivation, 85–86
 - leadership and, 219, 228–229, 236, 253, 259, 262
- Responsiveness, genetic differences in, 627
- Retreatism, 300, 352, 369–370
- Revenge
 - masochistic, 389
 - suicide of, 389–390
- Reversal
 - role, 365
 - status, 365
- Revitalistic movements, 369, 372–374
- Reward, 48–49
 - of aggression, 328–329
 - coalition formation and, 129, 132–134
 - drive, and authoritarian leadership, 258
 - economic, and leadership, 248, 251, 259
 - and groups, 116–118, 120–122, 124–125
 - national character and, 433, 435, 460, 470, 472–473
 - power, 166, 168, 174, 177, 180–181
 - social organization and, 618
 - social power and, 162–165
 - structure, and mixed-motive groups, 38–40
- Rhetoric of risk *vs* rhetoric of caution, 82
- Ridicule, national character and, 472–473
- Ring structure, of crowds, 518–521
- Riot, 509–510, 516–517, 522–523, 531, 535–539, 541, 547, 549, 551, 570–577, 601–602
 - “outsider,” 552
- “Rising pyramid,” Parkinson’s law of the, 158
- Risk taking, 580
- Risky shift phenomenon, in group processes, 26, 78–84, 86
- Rites de passage*, 316, 349–350, 386
- Ritual, 330, 348–352, 355, 372–373, 381, 386, 479, 568
- Ritualism, 300
- Roles, 302, 316
 - adult, 367
 - allocation, 288, 291
 - behavior, 303–304, 364, 366
 - changed, and persecutions, 597
 - conflict, 286, 294, 303–304, 307, 189
 - crowds and, 559–560
 - culture and, 421–422
 - demands, 294, 319, 364, 368, 471, 475, 480, 486, 489

- differentiation of, 114, 209, 211, 238, 270–271, 295–296, 548
- distance, 370
- executive, 29
- expectations, 233, 359–360, 363–366, 383–384, 436
 - leadership and, 233
 - social, 359–360, 363–366, 383–384
- function, 364
- functional, 215
- functioning, 483
- mobilization of, 560
- models, 318, 466, 470–471, 473
- “narcissism,” 390
- national character and, 421–422, 431, 435–436, 466, 470–475, 480–481, 483–484, 486, 488–489
- needs, 268, 270–273
- occupational, 474–475
- patterns, 484
- performance, 310, 471–474, 484
- positions, 489
- prescriptions, 167, 215, 273, 296
- relations in the family, and dominance, 158–159
- relationships, 305–306, 316, 474
- requirements, 292, 294, 309, 351, 368, 471, 474
- reversal, 365
- role-playing techniques, and graph theory, 108–109
- segmentation, 304
- segregation, 370
- set, 286
- sex, 357, 363–365, 431
- social, 292, 316, 347, 351, 357, 363–365, 370, 391, 439, 471, 474, 481, 488–489
 - culture and, 347, 351, 357, 363–365, 370, 391
 - expectations, 359–360, 363–366, 383–384
- socialization and, 435–436, 471
- specifications, 309
- structural role theory and group structure, 109–111
- suppression, 304
- theory, 293, 308
- Rorschach test, in cultural research, 334–335, 341–342, 359
- Rules
 - common preference ordering, 60
 - of conduct, 286, 299
 - conjunctivity, choice of, 58–59
 - crowds and, 516, 553, 559, 562
 - “of the game,” 127, 130, 133, 136
 - for group problem solving, 29, 48–51
 - unanimity, 28, 59
- Rumor, 538–540, 553–554, 563, 572, 574
 - intensity, 538–539
- Runs, mixed and unmixed, and crowds, 522
- Sadism, 478
- Salience of roles, and involvement, 304, 308
- Sampling, national-character research and, 452–453, 455–456, 459
- Sanctions
 - national character and, 471–474, 483, 485, 492
 - negative, 472–473, 597
 - failure of, and persecutions, 597
 - positive, 473–474
- Sapir-Whorf hypothesis, 337
- Satiation, social learning and, 621, 625
- Satisfaction
 - of followership, 252–255
 - group, 122, 140, 146, 149
 - leadership and, 207, 233, 248–251, 262–263, 267, 269–272
 - value, 438
 - vicarious, and followership, 253, 258
- “Saturation,” 149
- Scanning of embedded elements, 541
- Scapegoating, 352
- Schizophrenia, culture and, 377, 386
- Security system
 - individual, 432
 - internal *vs* external, 450
- Selection, natural, 630
- Selective exposure, information distribution in groups and, 17
- Selective mating, 326–327
- Selectivity, social structure and, 293–294, 309
- Self-assurance, leadership and, 218
- Self concept, national character and, 450–451
- Self-control, 446, 543
 - crowds and, 543
- Self-definition, 469
- Self-esteem
 - acculturation and, 373
 - national character and, 451, 472–473
- Self-evaluation, 171–173
- Self-justification, social movements and, 592
- Self-realization, 432
- Self-reliance, 368–369
- Semistructured clinical interview, in national-character research, 453–455

- Sensitivity, leadership and, 224–226, 231, 235
 Sensory stimulation, and stature, 330–331
 Sentiment, in Homans' group-structure analysis, 113–114
 Sequences, orderly, and social structure, 286, 288, 316–317
 Sets
 group vs. task, 36
 and representation of relationships, 104–105, 111
 role, 286
 status, 286, 294
 transmission, 26
 Sex
 adjustment, 360
 antagonism, 365
 behavior, 612–616, 620–622, 624, 630–633, 637
 competition, 347
 differences
 in acculturation, 371
 in agonistic behavior, 626, 638
 in coalition strategies, 135
 in conformity, 175
 genetic, 626
 in visual stimulation, 637
 expressive motivations in prohibitions on sex, 345–350
 jealousy, 390, 637–638
 neurophysiology and, 327–328
 repression of, 358, 380
 satisfaction, 326
 social structure and, 305–306
 socialization of, and culture, 325–327
 Shamanism, 357, 379, 382–383, 387
 Shame, national character and, 442, 451, 472–473
 Sharedness criterion of social character, 425
 Sharpening, 539
 Shelter-seeking behavior, 612–615, 638
 Sibling rivalry, 358, 361
 Similarity
 assumed, of opposites (ASo), 263–264
 attitudinal or value, and groups, 109, 121–122
 cognitive, and information exchange, 20–21
 definitions of groups and, 207
 influence and, 172–174, 177
 of paths, theorem, 107
 Simulation
 computer, 53, 584
 experimental, of crowds, 581–583
 “Sleeper effect,” 180, 545
 Sleeping patterns, culture and, 349–350, 362–363
 Sociability
 followership and, 245
 leadership and, 222, 230
 Social allegiance, 294, 300, 303, 308
 “Social aspiration,” 473–474
 Social behavior of animals, *see* Infrahuman animals
 Social boldness, 220
 Social bond information, 616–619
 Social character, 418, 422, 425, 481, 549
 Social class
 conflict, 311
 national character and, 462, 466
 social movements and, 588
 social structure and, 310–312
 Social comparison, 171–175, 177
 Social control, 239, 289, 291, 300–302, 307, 352, 385, 471–474, 516, 556, 558–559, 568, 579, 603
 Social deviancy, 375–391, *see also* Deviation
 culture and, 351, 360, 375–391
 delinquency, 390–391
 murder and suicide, 389–390
 social use of, 378–379
 Social differentiation, 287, 293–294, 301
 Social exchange
 matrix representation, 162–165
 power and, 162–165
 Social facilitation, 3–5, 68, 625
 Social identity, 555
 Social influence; *see also* Influence
 assertion training and, 24
 bases of, in mixed-motive groups, 36–37
 crowds and, 531, 545
 information dependence, 6–12
 mutual, 45, 55
 normative vs. informational, 36
 presence of others and, 4
 processes, under conflict of interest, 33–47
 risky shift and, 81–82
 spread of, in a group, 54–55
 Social interference, 3–5, 69–70, 76
 Social involvements, 294–296, 304–305
 Social movements, 507–509, 552, 557, 559–561, 577, 584–603
 Black Muslim movement, 597–600
 composition of, 588–589
 conventional society, 596–597
 conversion, 534, 592–593
 crowds and, 601–603

- deviant, 586
- disaffection, 595–596
- membership in, 590–596
- norm-oriented, 559, 561
- preconditions for, 589–590
- “rational” *vs.* “irrational,” 585–588
- recruitment, 592
- “self-help,” 594
- socialization, 593
- value-oriented, 559–560, 590
- Social organization, 613–619, 629–636; *see also* Infrahuman animals
- Social participation, 294–295, 302–305, 313, 315, 317
 - multiple, 303–304
- Social prescriptions, 291–292
- Social psychology
 - cross-cultural research and, 420–421
 - of infrahuman animals, *see* Infrahuman animals
- Social reality, 21, 167, 295
- Social reform, 373
- Social-responsibility norm, 179
- Social restraint, 446
- Social settings, 291, 313
- Social stratification, 287, 293, 313
- Social structure, 103–104, 111, 283–319, 323, 326, 345–348, 350, 354–355, 364, 368, 374–375, 381, *see also* Group structure
 - changing individuals and structures, 297
 - cultural *vs.* social structure, 301
 - definitions, 284–288
 - deviance, 284, 291, 295, 298–302, 305, 310
 - group constraints, 302–305
 - groups and the individual, 293–295
 - ideal and actual, 295, 301
 - individual differentiation, 293
 - methodological problems, 295–297
 - national character and, 418, 422–423, 445, 449, 458, 463, 466–467, 472, 477, 479, 481–484, 488–492
 - order and change, 317–319
 - orderly sequence, 286, 288, 316–317
 - patterns of action, 284–286, 288, 298–300
 - psychological approach, 291
 - social control, 300–302
 - social differentiation, 287, 293, 310–314
 - social-system approach, 286–289, 291–291, 296–310, 316–318
 - society and, 292–293
 - sociological approach, 290–291
 - statistical categories, 287–288, 314–316
 - subsystems, 301–303, 317
 - types of groups, 305–310
 - bureaucratic organizations, 308–310
 - family, 305–307
 - peer groups, 307–308
- Social systems, 286–289, 291–294, 296–310, 316–318, 364
 - incipient, 299
 - national character and, 423, 463, 472, 474, 479–489
- Social-welfare function in groups, 60
- Socialization, 327, 329, 340, 342, 347–348, 359–367, 375, 383–384, 593
 - adult resocialization, 319
 - anticipatory, 308
 - cognitive, 309
 - national character and, 435–436, 462, 466–467, 471–472, 479
 - primary, 617–619, 621, 625, 636
 - of role expectations, 363–365
 - of sexual expression, 325–327
 - social structure and, 289–294, 297, 300, 305–309, 313, 316, 319
- “Socially patterned defect,” 481
- Societal requiredness, 425, 449
- Society
 - collectively oriented, 340–341
 - social structure and, 289–293, 295, 316–319
- Sociocentrality, leadership and, 211, 214–215
- Sociocultural systems, modal personality and, *see* National character
- Socioeconomic status, *see also* Social class
 - motor development and, 331
 - national character and, 485–486
- Sociological approaches
 - to crowds (Smelser’s), 555–562
 - to national character, 421–422
 - to social structure, 290–291
- Sociological determinism, 291
- Sociometric status, 109, 112–113, 119–126, 134
 - leadership and, 211, 226
- Sociometric subgroups, 124–127
- Solidarity, 126
- Solvency, crowd, 522
- Source *vs.* message orientation, 180
- Spirit possession, 380–382
- Stability
 - of attributions, 8–11, 14, 17, 21, 24, 26, 30, 36–38, 48, 51, 55–56, 64, 74
 - collective behavior and, 509, 564–565
 - social, 418, 423, 426, 470, 480–481, 491

- Standardization
 in national-character research, 443, 447, 449, 456
 personality, 464
- Status
 changes, 370
 class, 310–315
 consistency and inconsistency, 294, 303, 312
 deprivation, 368
 differences, 475
 differentiation, 157
 envy, 362
 and group problem solving, 38, 41–42, 45
 indicators, 312–313
 inheritance, 313–314
 integration of, 480
 leadership and, 227, 235, 240, 245, 252–253, 266, 269–270, 272
 minority, 384
 mobility, 311, 313–314
 national character and, 427, 470–471, 475, 480, 488
 needs, and leadership, 250–251, 255, 261
 outcaste, 384
 personality, 427
 positions, 471, 488
 ratio of, 250
 relationships, and reinforcement, 161–162
 reversals, 365
 sequences, 286, 288
 set, 286, 294
 social, 310–315, 351, 367, 369
 attainment of adult, 367, 369
 witchcraft and, 351
 socioeconomic (SES), 310–315, 331, 485–486; *see also* Social class
 sociometric, 109, 112–113, 119–126, 134, 211, 226
 structure, and national character, 470
- Steatopygia, 327
- Stereotypes
 mutual, 446
 national, 455
 social movements and, 588
- Stimulus-response theory, national character and, 433
- Strain
 structural, 538, 556–560, 568
 “structured,” 489
- Stratification
 social, 287, 313
 theory, 293
- Stress
 acculturative, 373–375, 379, 383–391
 cultural, and psychopathology, 379, 383–391
 group problem solving and, 31–32
 physiological development and, 332
 social, and alcoholism, 388
 “Surviving for individual prominence,” 40–42
 Structural analysis, folklore and, 354
 Structural conduciveness, 556–558
 Structural regions, psychoanalytic, 433
 Structural strain, 538, 556–560, 568
 Structure-in-interaction, 207–208, 215
 Structure-oriented models of group structure, 103–113
 Structure theorem, in graph theory, 107
 “Structured strain,” 489
- Styles
 administrative, 470
 leadership; *see* Leadership
 “of life,” 312
 music and art, and culture, 355
 political, 439, 485
- Subcultures, 313
- Submissiveness, 374, 380–381
 followership and, 245, 249, 252, 254–255, 259
 national character and, 469, 485
- Subordination (vs. dominance), 613, 616, 627
- Success
 costs of, 314
 leadership and, 251
 success-failure experiences, and group problem solving, 23, 32, 57, 78, 85–86
 task, in groups, 121–123
- Succession phenomena, 265–267, 297, 308, 310, 316, 318
- Suggestibility, crowd behavior and, 544
- Suicide, culture and, 389–390
 anomic, egoistic, and altruistic, 389–390
 of revenge, 390
 “Samsonic” pattern, 389–390
 vicarious, 389
- Superego processes
 crowds and, 546–547
 national character and, 430, 432–433, 451, 465, 468, 482–483, 485
- Support subgroups, 124–127
 solidarity vs. conflicting vs. dominant vs. contending, 126
- Surgency, 222–223
- Surging, of a crowd, 534
- Surrogates, cultural, 451

- Surveillance, 167, 170–171, 178, 181, 183, 289, 309
- Survey techniques, 578
- Susceptibility
- to illusions, and culture, 333–334
 - to influence, 9
 - to membership in social movements, 590–592
 - to panic, 578
 - to social contagion, 551
- Symbiosis, 285
- Symbolism
- cross-cultural equivalence of, 356
 - in culture, 335, 345–359, 378, 384, 386
 - sociological and psychological functions of, 345, 347
- “Symbolization,” 591
- Symmetry, of relations, 104
- Synergy, group, 114–115
- maintenance *vs* effective, 115
- Syntality, 114
- leadership and, 214–215, 238, 246–247, 265, 268
- Syntax, as cognitive unconscious, 336
- Systematic concessions, 45, 49, 59
- Taboos, 346
- incest, 306, 345, 347–348, 389
 - sexual, 347, 350, 362
- Talkativeness
- group problem solving and, 22, 58, 72
 - leadership and, 222
- Task
- communications nets and, 147–149
 - complexity, and decision structure, 242
 - critical demands of, 115
 - difficulty, 148–149, 151, 155
 - “families,” and leadership, 247
 - input variables, 115–116
 - performance, and interpersonal behavior, 116–118, 123–124
 - planning, *vs.* task activity, 153–154
 - output variables, 115
 - structure, 264
- Teasing, 361
- Tension
- balance and, 108
 - intragroup, 351–352
 - in kinship structures, and spirit possession, 380
 - nervous (Q4), 219
 - systems, 166
- Territorial behavior, 328, 617, 629–630, 632, 634–635
- Terror, 289
- Thanatomania, 332
- Thematic Apperception Test, in cultural research, 358–359
- Thinking
- animistic, 333, 338–341
 - concrete *vs* abstract, 338, 340, 342–344
 - “introversion,” 222
 - language and, 336–338
 - logical, and culture, 333, 336–344
 - magical, and crowds, 561
 - native categories of, 338
 - “participation,” 338, 340
 - prelogical or autistic, 341–342
 - primary process, 341–342, 375, 386
 - symbolic, 335
 - universality of metaphor and simile, 336, 339
- Time
- cross-cultural approaches, 335
 - “lag,” cultural, 357
 - orientation, 371–372
 - value orientation, 435–436
- Toilet training, 638
- culture and, 361–362
 - national character and, 460, 462
- Total institutions, 309
- Totalitarian systems, 302–304, 306–307
- Totemism, 349
- Tradition, 7, 391
- Training
- assertion, 24
 - group problem solving and, 69, 73, 76–77
- Trance phenomena, 380–381
- Transfer effects, and group processes, 68–69, 75, 77
- Transference, leadership and, 254, 257
- Transitivity, of relations, 104
- Transmission set, 26
- Trophallaxis, 613
- Trust, mixed-motive groups and, 38–39, 45
- Tyranny, 256
- Ufufuyana*, 380
- Unconscious factors, *see also* Consciousness
- cognitive, 336
 - conflicts, 381–382
 - dreams and, 356–357
 - meaning and acculturation, 370
 - national character and, 429–433, 443, 448, 450–451, 454, 467, 478–479

- Uniformity
 - pressures toward, 25–27, 58, 71–73, 172–175
 - pressures toward nonuniformity, 175
- Unitary-trait theory of leadership, 267–268
- "Unity theme," 451
- "Universalism," 474
- Universality
 - impression of, and crowds, 537, 541, 553
 - of metaphor and simile, 336, 339
 - of oedipal conflict, 346
 - of symbolism, 356
- Validity
 - ecological, of cues, 50
 - external, criteria of, for making attributions, 7
- Values
 - adult, 360
 - aggression and, 329
 - collective, 293, 299
 - crowds and, 559–560
 - cultural, 313, 354, 388, 419, 424, 435–436, 438–442, 448, 450, 468, 470–471, 473, 483
 - leadership and, 226–227
 - orientations, 359, 363–364, 366–367, 371, 435–436, 439, 442, 446
 - "paths of life" test, 446
 - satisfactions, 438
 - social structure and, 286, 289, 291, 299–301, 316–318
 - value-added determinants, 555–562
 - value-attitude systems, 430
 - value-oriented social movement, 559–560, 590
 - violation, 451, 469
- Variability
 - culture and, 333, 341, 344
 - genetic, and social behavior, 626–628
 - individual, and national character, 427, 455, 464
 - intergroup *vs* intragroup, 298
 - social structure and, 284, 290–292, 298, 310, 316
- Verifiability of solutions, and group problem solving, 21
- Violence, 517, 546, 552, 555, 569–570
- Viscosity, leadership and, 237–238, 242–243, 262
- Volunteering of information, 17–18
- Voodoo (or Vodun), 379–381
- Voting process, 62–64
- Warfare, 329
- "Wave" phenomena, 566
- "We-feeling," 209
- Weaning
 - culture and, 332, 361–363
 - national character and, 434, 460, 462
- Weight, leadership and, 216–217
- Whorlian hypothesis, 337
- "Wild man" behavior, 381
- Wish fulfillment, expressive behavior and, 353, 357
- Witchcraft, social and psychological functions of, 350–352, 378, 386, 389
 - manifest *vs* latent functions, 352
- Withdrawal, 305, 352
- Word fluency, and surgency, 222
- Worrying, anxious (O+), 219